JAN 15 1947

Electrical World

NEWS ISSUE JANUARY 11, 1947

George A. Rietz, Manager, Farm Industry Division, General Electric Co., Who Has Been Nominated for the Presidency of the American Society of Agricultural Engineers

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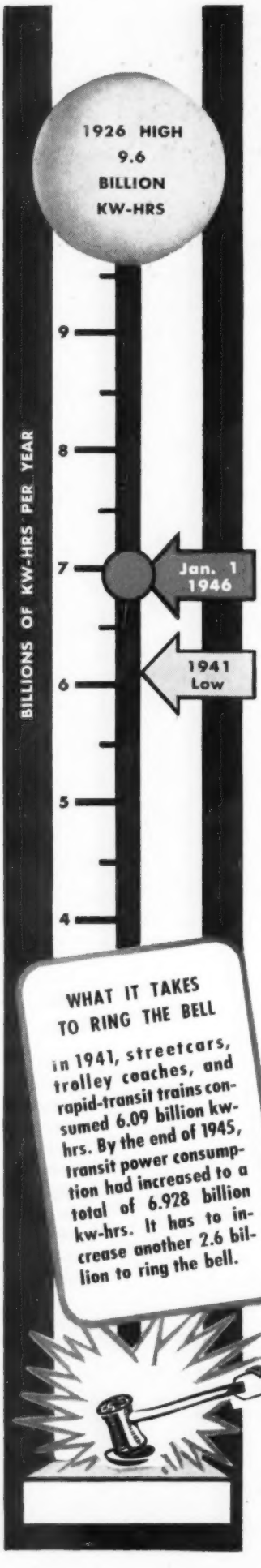
A BIG NEW LOAD FOR TOMORROW . . .

THAT YOU CAN START BUILDING TODAY

Here's an opportunity to rebuild the transit power load, which dropped 3½ billion kw-hrs from 1926 to 1941.

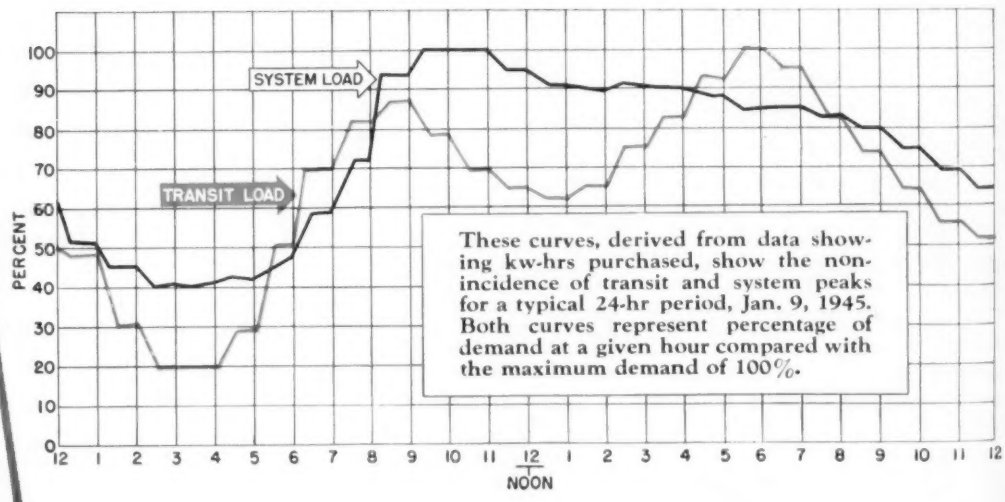

1926 HIGH
9.6
BILLION
KW-HRS
BILLIONS OF KW-HRS PER YEAR
9
8
7
6
5
4
Jan. 1
1946
1941
Low
WHAT IT TAKES TO RING THE BELL
In 1941, streetcars, trolley coaches, and rapid-transit trains consumed 6.09 billion kw-hrs. By the end of 1945, transit power consumption had increased to a total of 6.928 billion kw-hrs. It has to increase another 2.6 billion to ring the bell.

AN all-time high of 4500 modern streetcars and trolley coaches have been purchased in the past 18 months. According to the transit industry's present plans, 12,000 additional electric vehicles will be purchased within the next few years—and that's only the beginning. The ultimate load-building possibilities of the new transit industry are tremendous!

In an average city of 200,000 population, one transit company could profitably operate 150 trolley coaches—a 27 million annual kw-hr load. A large city of one million people could economically use 950 trolley coaches and 300 modern streetcars—or 236.5 million kw-hrs annually.

Here's why utility men are actively interested in the new transit load: Its potential size may be greater than that of any other single industrial or commercial activity. An annual load factor as high as 53 per cent adds to its attractiveness. Its peaks do not coincide generally with system peaks, as shown on the typical curves below.

While civic improvements and transit modernization plans are snowballing in almost every city, why not investigate the possibility of modern electrics for your community? By actively promoting their application now, you can start building a new, bigger load for tomorrow. *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*



These curves, derived from data showing kw-hrs purchased, show the non-incidence of transit and system peaks for a typical 24-hr period, Jan. 9, 1945. Both curves represent percentage of demand at a given hour compared with the maximum demand of 100%.

Lifestream of the City, a new More Power to America sound, color movie, presents the city traffic problem in a new light. You'll like it. It promotes the use of electricity as the most efficient means of providing urban transportation. If you haven't yet seen it, ask your G-E representative to arrange for a showing.

GENERAL ELECTRIC

ELECTRICAL WORLD

VOLUME 127 NUMBER 2

NEWS ISSUE

JANUARY 11, 1947

Truman Asks Bigger Public Power Appropriations for '48

REA Loan Fund of $250,000,000 Equal to 1947 Authorization —$151,432,200 Asked for Reclamation Bureau—Most of BPA's $20,278,000 for Construction—SPA Funds Will Be Reduced

INCREASED APPROPRIATIONS during fiscal 1948 were asked by President Truman in his annual budget message on Friday for practically all federal agencies engaged in power operations.

Though the President advised Congress that the 1948 budget provided no "initial appropriations for any new projects" under the flood control, navigation and reclamation programs, the Army's Corps of Engineers and the Bureau of Reclamation were scheduled for funds either approximating or exceeding 1947 appropriations. The Rural Electrification Administration was listed for a $250,000,000 lending fund, equal to its 1947 authorization.

Reclamation Bureau, which received $121,721,506 in 1947 appropriations, was alloted $151,432,200 for fiscal 1948. Of this, $130,942,000 is for construction. With a carry-over from previously appropriated funds, it would keep 30 projects "active," the President estimated.

Individual items for Reclamation included $27,500,000 for Columbia River Basin work; $20,000,000 for California's Central Valley; and $23,000,000 for the Missouri River Basin. Other major projects for which funds were listed included Davis dam, $18,000,000; Colorado-Big Thompson, $14,000,000; Hungry Horse, $4,500,000; and Fort Peck, $2,500,000.

The Bureau also was slated for $5,000,000 to continue general investigations, $1,810,000 for Missouri River Basin surveys and $500,000 for investigations in the Colorado River Basin.

Total appropriations for civil functions of the Army Engineers were approximately $264,000,000, as against $254,000,000 during fiscal 1947. The budget alloted $101,994,000 for rivers and harbors work. Of $163,356,000 asked for flood control, an item of $152,584,000 was for continuing work on 59 projects. An unexpended balance of $30,000,000 from 1947 flood control funds will also be available.

Bonneville Power Administration's allotment of $20,278,000 contains $15,578,000 for construction, including 252 circuit-miles of new transmission lines and six new substations. BPA received $12,470,000 in appropriations during fiscal 1947.

New budget estimates for the Southwestern Power Administration total $2,725,000, or $4,882,400 less than it received in 1947 appropriations. Of the $2,325,000 scheduled for SPA construction, $2,000,000 for acquisition of the Ark-La transmission line and the Lake Catherine steam generating plant is the principal item. This amount is an addition to funds appropriated last year for purchase of the Ark-La line from an REA-financed cooperative.

A direct appropriation of $25,000,000 to the Rural Electrification Administration for loans during fiscal 1947 was requested in addition to the recommendation that REA be authorized to borrow $225,000,000 for lending purposes from the Reconstruction Finance Corporation. REA also was in for $5,600,000 for administrative expenses.

New appropriations amounting to $27,057,500 were recommended for the Tennessee Valley Authority. To this amount will be added withdrawals from TVA revenues to finance a $32,585,000 program of construction and acquisition. Operating costs during fiscal 1948 are estimated at $7,850,000. Principal construction planned is on Watauga and South Holston dams and new transmission lines.

Budgetary requests for the regulatory agencies also were above appropriations received during fiscal 1947. Federal Power Commission was scheduled for $3,905,000, as compared with the regular 1947 appropriation of $3,060,000 for FPC. The Securities and Exchange Commission came in for a $6,438,700 recommendation, about $1,522,000 above the 1947 appropriation.

The Atomic Energy Commission was recommended for an appropriation of $250,000,000. However, some $444,000,000 will be expended during the coming year for atomic research, President Truman announced.

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Peak Loads Hit New High

The aggregate of major electric utility system peak loads for November, 1946, indicated a new record maximum of 41,923,000 kw., according to the Federal Power Commission. The November peak loads, totaling 12.4 percent higher than November of last year, exceeded by almost 1,500,000 kw. the previous maximum of 40,463,929 kw. set in October, 1946. The November peak load total in setting a new record high repeated the performance of the three previous months. Corresponding energy requirements for November amounted to 19,531,647,000 kw.-hr., an increase of 13.8 percent over November, 1945.

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Argentine-Chilean Trade Pact Won't Affect Copper Imports

Text of Agreement Still not Available in United States but Summary Indicates Clearly no Curtailment or Diversion of Existing Copper Supplies—Most Chilean Mines American Owned

NOTHING in the Argentine-Chilean trade agreement signed recently will affect existing supplies of copper imported by the United States from Chile, according to best knowledge available in this country.

While text of the December 13 agreement is not available in this country, a summary of it released by Roberts, Meynell & Co., Buenos Aires financial agents, indicates clearly that no curtailment or diversion of existing U. S. supplies is to be anticipated under the new agreement. The summary mentions copper only once, in connection with the organization of a "mixed Argentine-Chilean" trading company which, with Argentinian capital, will intensify "The production and export to Argentina of products of interest to the latter, such as copper, iron, steel, nitrates, coal, lumber, etc."

Copper Producers Confused

In the absence of a formal text of the agreement, U. S. copper producing and fabricating companies were at a loss to translate its meaning. Without exception, they told ELECTRICAL WORLD that they had been unable to obtain text of the agreement. At the moment, officials of these firms appeared more concerned with the fact that the document was not available than with its content.

The summary states that both countries agree to suppress all custom duties on each other's goods, whether imported for consumption or industrialization. Certain goods will be excluded from this provision and it is agreed that both parties will submit a list of excluded goods within 180 days from the signing of the agreement.

Government of Argentina also grants the Chilean Government a two-year revolving credit, with a permitted overdraft of up to 100 million pesos at any given time, to be used exclusively to cover Chile's unfavorable balances of trade with Argentina. The Chilean Government also guarantees the eventual return to Argentina of capital invested in the company and a minimum dividend of 4 percent per annum on the company's capital. It also provides for the execution of a public works plan for Chile, rights in land, sea and air communications, provision for the insurance of goods in transit, and promotion of film industries.

The State Department has asked the two countries for a further spelling-out of the agreement with regards to what commodities will be given free entry into the Argentine. Copper is expected to be one of these, it was learned.

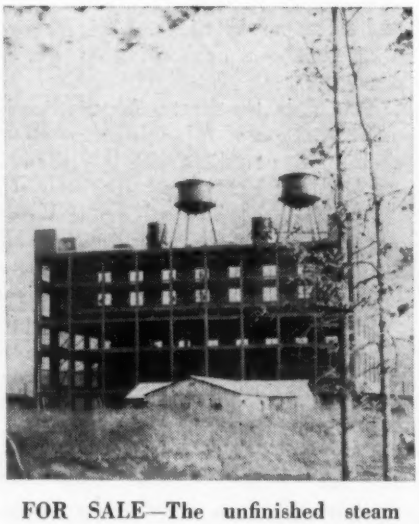
Approximately 95 percent of Chilean copper production comes from American-owned mines. In 1945, this totaled 53,758 tons of unrefined and 383,669 tons of refined copper.

The question of the change in tariff structure on copper will be discussed by the Committee for Reciprocity Information in Washington late this month. Both producers and users of the metal can submit briefs and testimony at that time. About one month ago, an attempt was made to cut the 4-cent duty, but John Steelman of OWMR refused to use Presidential powers to bring this about stating that tariffs are a problem for Congress.

Interesting information on the domestic supply of copper was given recently by C. Donald Dallas, president, Revere Copper & Brass, Inc., in a year end statement. He stated that deliveries to fabricators in October, 1946, totalled 136,000 tons of which only 65,000 tons were from domestic mines and that probably 25 percent of this was subsidized by the government. Of the remaining 71,000 tons, 51,000 were obtained from abroad by the Metals Reserve Corporation and the remainder was drawn from refinery stocks and scrap. He also indicated that the Metals Reserve stock pile contains approximately 100,000 tons and that this will be exhausted early in the year.

Elmer W. Pehrson of the Bureau of Mines stated in his recent study of copper reserves in the United States, "It is estimated that production could be maintained at the rate of 1,000,000 tons per year for about ten years following which there would be a gradual decline to exhaustion."

Dallas also referred to Dr. Werdenhammer's Bureau of Foreign and Domestic Commerce calculations which are based on the increase in population and increase in consumption per capita from the present 16 to 18 pounds to 26 to 32 pounds by 1970. That indicates we will need a minimum of 2,600,000 tons of copper by the end of 1970 and that the return from scrap will be 1,000,000 tons. This would leave us with a direct requirement of 1,600,000 tons, which is a graver situation than anything which has been contemplated to date and is a serious matter from the standpoint of national security, he concluded.



FOR SALE—The unfinished steam power plant at the Jones Mills aluminum plant at Lake Catherine, Ark., has been placed on sale by the War Assets Administration. One of the possible buyers is the Arkansas Power & Light Co.

Nebraska Power Officials Get New Titles from P.P.D.

The Omaha Public Power District which recently took over the Nebraska Power Co. is making minor changes in its organization. Though the operating management and the entire personnel have been retained intact, there has been a change in title of the higher officers.

J. E. Davidson, who was president of Nebraska Power, is now general manager of the power district. Vice-President Roy Page has been made executive manager; Vice-President Fay Smith, operating manager, and Secretary-Treasurer Frank Moylan, treasurer and assistant secretary.

Telephone operators who formerly answered calls with "Nebraska Power" now are testing out several greetings—"Omaha Power District," "Power District," and "Electric Service"—to see which is the most popular.

TVA's 1946 Activities Down; E.E.I. Charges TVA Deficit

DESPITE THE LOSS of its heavy war industry load, Tennessee Valley Authority finished the 1946 fiscal year with its power output, revenues and energy sales just slightly under the record figures established during fiscal 1945.

Shortly after the opening of the fiscal year the Japanese war ended, and TVA's direct sales to industries and such federal developments as the War Department's Manhattan District were cut back sharply. A few months after V-J Day, total production by the TVA system had been reduced 25 percent. By the end of the fiscal year power production was again at war-time levels.

Construction was largely limited to the final phases of work on dams placed in operation during previous years and to lesser jobs. Congress appropriated funds to continue war-halted construction of the Watauga and South Holston dams, last of TVA's major projects.

For the second straight year total power production exceeded 10,000,000,000 kw.-hr., though the 1946 output of 12,314,000,000 kw.-hr. was slightly under the previous year's production. With rainfall in the valley averaging 7 in. above normal, the hydro plants produced 11,997,000,000 kw.-hr., or 97 percent of the total system output, a new record for hydro production. This figure included the production of five major and three small hydroelectric developments of the Aluminum Co.

Coal Reserve Increased

Steam plants, operated principally on a standby basis, produced 317,000,000 kw.-hr. An average of 1.47 lb. of coal was used per kw.-hr. produced, as against the 1.07-lb. average of the previous year. The average cost of coal was $4.50 per ton, an increase of 31 cents per ton over coal cost in 1945. The reduced steam output enabled TVA to build up its coal stocks, from which it sold and loaned considerable quantities to three railways during the coal strike of May, 1946.

Gross power revenues for the fiscal year amounted to $35,265,000, about 10 percent less than the $39,383,000 of 1945. Net power income dropped in the same proportion, to $16,200,000, as against $17,982,000 during the previous year. The rate of return on net power investment was 4.2 percent, or 0.6 percent below that of fiscal 1945. Average revenue per kw.-hr. rose from 3.78 mills to 3.85 mills.

THE TENNESSEE VALLEY Authority showed an over-all deficit of $8,041,000 for fiscal 1946, ended last June 30, "after all costs, acknowledged and concealed," the Edison Electric Institute asserted this week. The figure, E.E.I. went on, brings "the grand total lost by the United States since its (TVA's) inception to almost $100,000,000."

E.E.I. based its assertion on TVA's latest annual report showing a net power operating income of $16,213,724, net losses of $11,374,891 on such of its other operations as navigation, flood control and chemical operations, and a "balance available for return on total investment" of $4,838,833. The industry association asserted that this "balance" would become a deficit if the interest which the U. S. Treasury paid on borrowed funds invested in TVA plant were to be considered.

To support its assertion that TVA had "hidden" power costs in other activities, E.E.I. cited in the table.

"The annual report of the Secretary of the Treasury for the fiscal year ended June 30, 1945," E.E.I. asserted, "showed on page 655 the U. S. Owned Capital in the TVA as $665,688,000. This is money furnished by the taxpayers of the United States and lent to TVA by the Treasury. On this sum, the Treasury Department pays interest at the annual rate of long-term bonds outstanding, but this charge appears nowhere in the financial accounts of TVA. In 1946, the interest rate was 1.936%. On these multiple-purpose dams, the Treasury thus paid in interest on the sum allocated to power $5,290,000; on navigation, $2,887,000, and on flood control, $2,958,000. Total cost of production at these dams was actually $21,663,000 (or 2.28 mills per kw.-hr. generated) instead of the $6,198,023 (0.65 mills) claimed by TVA."

	1,569,200-Kw. Capacity			9,495,864,000 Kw.-Hr. Generated		
Multipurpose Dams	Investment	Per Kw.	% Total	Prd'n Expense*	% Total	Per Kw.-Hr.
Power	$273,251,512	$174.13	47.51	$6,198,023	58.87	.0653¢
Navigation	149,116,375	95.03	25.92	2,309,548	21.93	.0243
Flood Control	152,817,804	97.39	26.57	2,020,740	19.20	.0213
Total	$575,185,691	$366.55	100%	$10,528,311	100%	.1109¢

Note: *Including depreciation and a proportionate share of administrative and general expenses.

Phoenix (Ariz.) Gazette

PREPARING FOR AN ARIZONA RATE SURVEY—Edward L. Dunn, center, supervisor of rates and accounting for the Federal Power Commission, at a conference with Commissioner Yale McFate, left, and Chairman Wilson T. Wright of the Arizona Corporation Commission. Dunn visited Phoenix to make a preliminary study of a program of the Arizona commission to make a survey of gas and electric rate structures of major utilities in the state. The proposed survey is the center of a political controversy and is being fought in the Arizona courts

Wright Rejects Proposal of Firms for SPA Power

Administrator Douglas G. Wright of the Southwestern Power Administration has rejected an offer by twelve southwestern electric utilities to purchase all energy developed at Norfork and Denison dams in Arkansas and Texas. The offer was essentially the same as that made early in 1946, and was rejected by Wright "for the same reasons" as were advanced last March, when the offer was first rejected.

The companies, Public Service Co. of Oklahoma, Oklahoma Gas & Electric Co., Oklahoma Power & Water Co., Southwestern Gas & Electric Co., Arkansas Power & Light Co., Arkansas Missouri Power Corp., Kansas Gas & Electric Co., Empire District Electric Co., Mississippi Power & Light Co., Louisiana Power & Light Co., Missouri Utilities Co., and Gulf States Utilities Co., proposed a contract whereunder they would purchase all output at Army-determined, FPC-approved rates, purchases to be made at the generating station busbar, and savings to be passed on to the ultimate consumers as Congress or state commissions dictate. They offered to construct necessary transmission facilities and to negotiate rates for rural electrification, subject to commission approval, with SPA.

In rejecting the offer, Wright asserted that it offered no ground for negotiation, but solicited any offer individual companies might make for the purchase of any available power or for integration of private systems with SPA's holdings.

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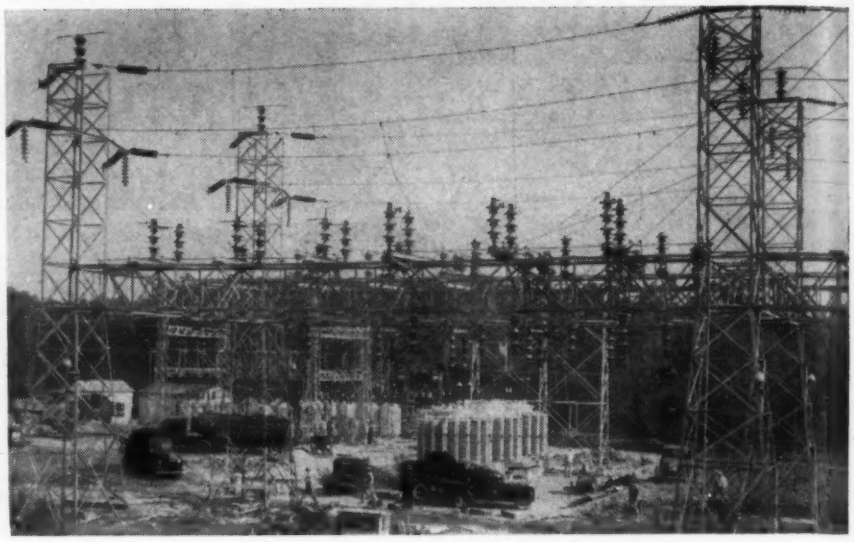
Mexico Leases 10,000-Kw. Power Train from Navy

Arrangements have been completed for the Navy Department to lease to Mexico a 10,000-kw. Navy power train to alleviate power shortage conditions south of the border caused by an extreme drought, it was learned this week.

The power train, built during the war for emergency standby reserve to insure continuity of service to Navy yards, is now at Philadelphia and is expected to be in service in Mexico by February 1.

It is scheduled to be hooked onto the Guanajuato power system of American & Foreign Power Co. at Celaya, Mexico. Present plans are that the train will remain on lease to Mexico until February 1, 1948, by which time additional generating capacity is expected to be installed.

Negotiations for lease of the power train to Mexico were conducted through the State Department by the staff of American power consultants headed by Edward Falck, former director of the war-time Office of War Utilities, which was retained by the Mexican government last fall to advise it on both short-term and long-term power planning in that country (ELECTRICAL WORLD, September 21, 1946, Page 3).



RUSHING POWER FOR A COAL MINE—When the Alabama Fuel & Iron Co. decided to close its 7,000-kva. plant at Colgate and sign a contract for power for its mine there with the Alabama Power Co., the utility was given just 30 days to make the connection. To meet the deadline the utility had to build a 44-kv. substation and increase the capacity of a 110-kv. primary substation. Since new equipment was not available, used surplus material was converted for the installations. The picture shows the 110/44-kv. 13,500-kva. primary substation at Fulton Springs. Crews unloaded and installed the equipment over the week end as well as pouring foundations for the structural steel and erecting it

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Canadian Output Statistics

The Dominion Bureau of Statistics has released the following output statistics of Canadian central electric stations in thousands of kilowatt-hours:

Period	1946	1945
Ten months	34,364,850	33,574,912
Primary	26,575,078	27,071,828
Secondary	7,789,772	6,503,084
Exports to U.S.	2,166,259	2,194,922
October	3,550,001	3,309,021
Primary	2,844,171	2,656,028
Secondary	705,830	652,993
Exports to U.S.	183,108	224,801
September	3,265,860	3,079,310
Primary	2,725,632	2,601,286
Secondary	540,228	478,024
Exports to U.S.	199,879	215,831

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Rural Loans Approved

The Rural Electrification Administration in November announced loans totalling $21,790,500 to 79 cooperatives and three public power bodies in 30 states. Most of the loans were for the construction of lines, of which 13,439 miles are to be built to serve 36,129 customers.

Sacramento Takes Over Pacific G. & E. Properties

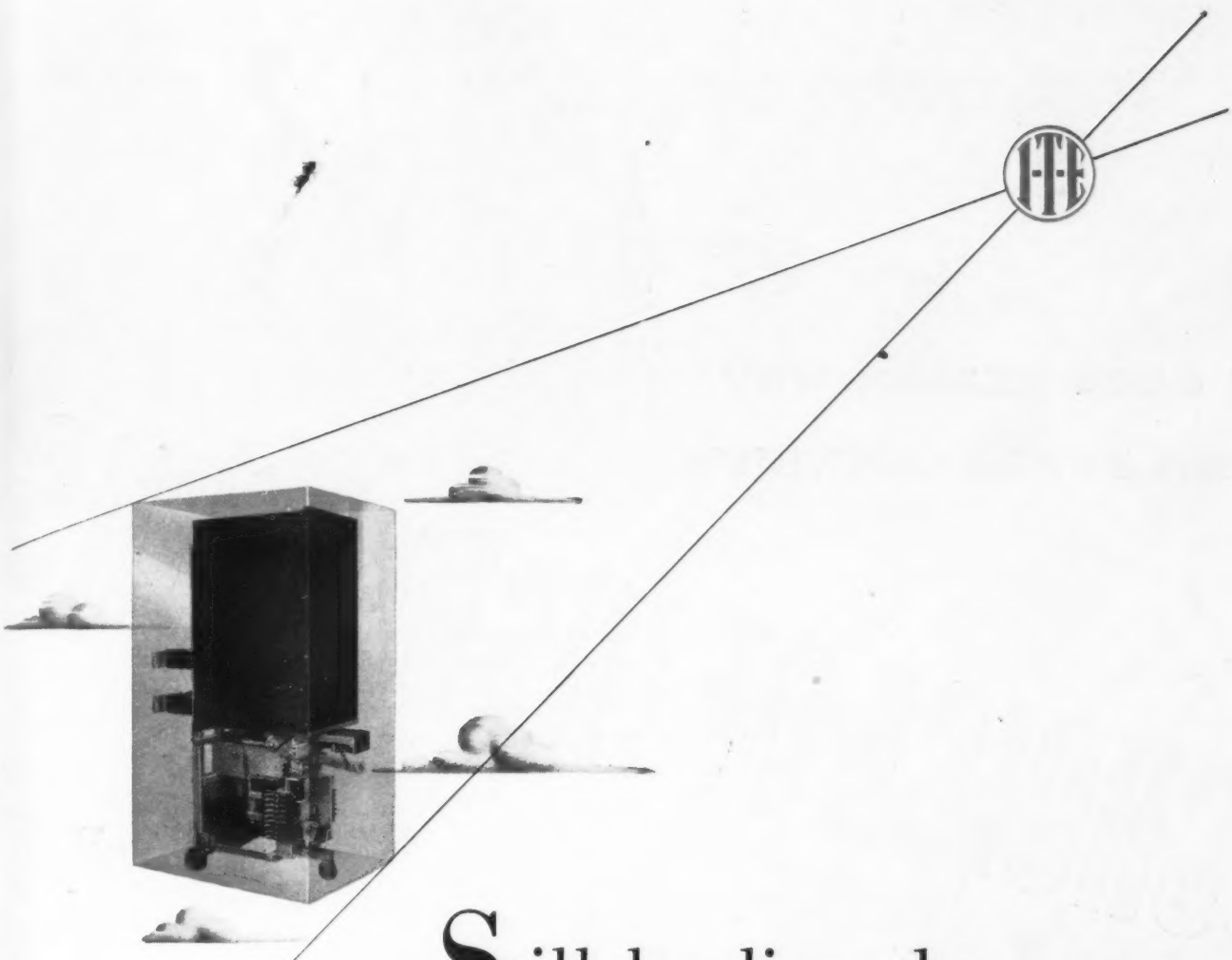
Sacramento Municipal Utility District at 6 p.m., December 31, officially took over from Pacific Gas & Electric Co. California utility properties serving 63,000 customers in 650 square miles.

The district paid $13,345,000 for distribution facilities, the transaction marking the end of a 22-year effort to acquire the property. Along with the deal was a contract with P. G. & E. under which the company will furnish the district with power for seven years at 5.8 mills per kw.-hr., lowest rate ever given for firm power to a municipality by P. G. & E.

District officials spoke highly of cooperation given by the utility during the past eight months in identifying and transferring the system and in selling to the district scarce materials and supplies.

With special concessions being made by district directors, 200 employees transferred to district employ. Salaries equal or better were assured transferring employees along with guarantees that full pension rights would be assured under civil service.

Signing of official transfer papers ended years of court battles which went all the way to the U. S. Supreme Court. For the last three years California Utilities Commission held a series of hearings to determine the system's net value.



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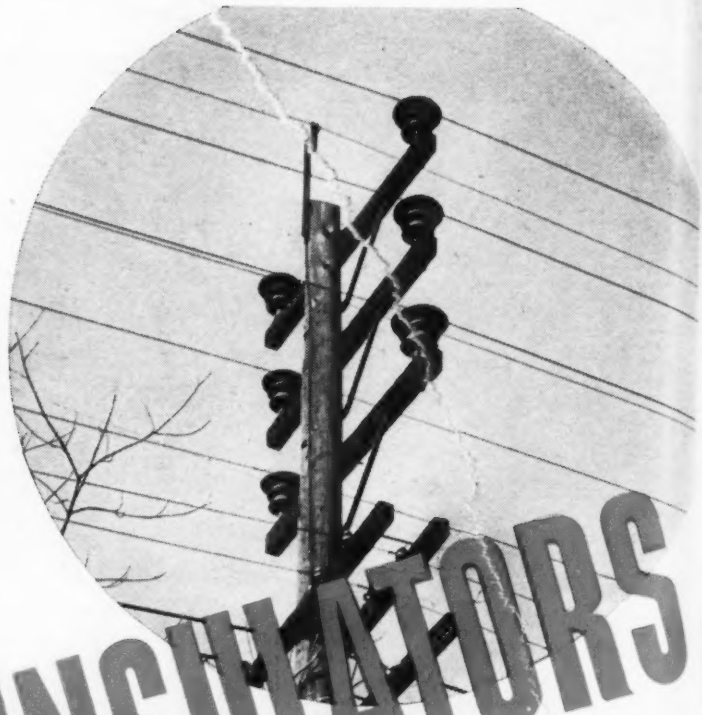

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THIS POWER COMPANY'S

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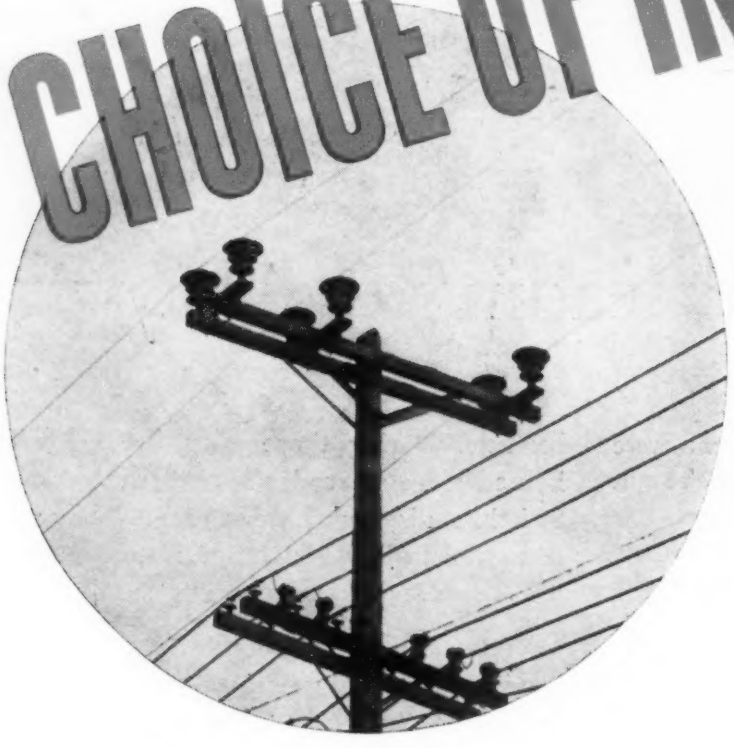

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End of Hostilities Will Bring Termination of Hydro Pacts

5 Major Contracts with Private Utilities for Purchase of Power From Federal Plants Will Terminate within 2 Years—Other Effects of Truman Proclamation Are Minor

FIVE MAJOR CONTRACTS involving energy sales from federal hydroelectric plants will terminate within six months to two years as a result of President Truman's proclamation of the end of hostilities.

Expiration dates of several other sales contracts involving delivery of Federal hydro output also were tied to the hostilities termination but, like the several bussing contracts signed by the Bonneville Power Administration, previously had been terminated.

Three contracts of the Southwestern Power Administration began ending following the President's proclamation. SPA's agreement with the Texas Power & Light Co. for 30,000 kw. of Denison Dam energy expires June 30, 1947. It began in May, 1944. Another contract for Denison power, selling 5,000 kw. to the Oklahoma Gas & Electric Co., also terminates next June 30. Expiring then is another agreement, executed in February, 1945, for sale of 35,000 kw. of Norfork Dam power to Arkansas Power & Light Co.

Shasta Contract Expires

Principal Bureau of Reclamation contract affected is the September, 1943, agreement for sale of 150,000 kw. of Shasta output to the Pacific Gas & Electric Co. The agreement terminates on December 31, 1948.

The Bureau's contract to sell 20,000 kw. of Green Mountain dam power to the Public Service Co. of Colorado ends December 31, 1947. This contract is subject to cancellation upon six month's notice. Green Mountain Dam is a part of the Colorado-Big Thompson reclamation project.

Several Interior Department contracts for energy purchases in the Arizona area during the power shortage there also are affected by the end of hostilities. However, this emergency is expected to be alleviated before these contracts expire.

Many of Interior's power sales contracts also will be terminated by the official ending of the war, or shortly thereafter, and by the revocation of two national emergency proclamations, which became effective before the United States entered the war.

Elsewhere, effects of the President's hostilities-termination order on electric utilities were mostly unimportant. One was the immediate end of the federal government's power to seize struck plants. This device never had been invoked against an electric power system, although it was urged several times.

Tax on Light Bulbs Cut

Tax changes, of which there were a number, were mostly technical. The excise tax on light bulbs was cut from 20 to 5 percent, effective next July 1. Congress may advance the date.

Restrictions written into flood control-authorization bills, prohibiting appropriations, are rescinded, but the move has no effect upon the ceilings imposed by the Budget Bureau.

Reclamation-project water users will, after December 31, 1951, have to make repayments on a fixed schedule rather than on rates adjusted by the Reclamation Bureau.

Priorities Still Available to Utilities in Emergencies

Public utilities still may obtain priority assistance from the Civilian Production Administration in procuring materials and equipment for emergency repairs. The continuation of CC ratings for this purpose constituted one of the few exceptions to the abandonment of war-time priorities ordered by the Office of Temporary Controls, January 8.

The OTC order, amending Priorities Regulation 28, specifically limited issuance of CC ratings to the following cases:

1. Items to fill military orders which cannot be deferred without hurt to the defense program or to health and welfare of enlisted personnel;

2. Items to provide essential utility services or, in emergencies, to eliminate serious hazard to life, health and safety of a large number of people;

3. Materials and equipment required to maintain or increase production of building materials in short supply.

Scrapped by this amendment is all remaining government priority aid to business for production materials, maintenance and repair, and capital equipment or construction materials, with the exception of emergency aid to utilities.

OTC officials emphasized that utilities will not be granted CC ratings for day-to-day maintenance projects

EMPLOYEES' BLOOD BANK—Employees of Consolidated Edison Co. of New York who made such an enviable record as blood donors during the war-time campaigns of the Red Cross have started their own blood bank for the benefit of employees and their families. Here Patrick McGrath, chairman of the Joint Council, Brotherhood of Consolidated Edison Employees, submits to a blood pressure test with H. R. Searing, executive vice-president; A. Augustus Low, vice-president, industrial relations; and J. J. Wittmer, assistant vice-president, as spectators. The service has the cooperation of the firm's medical department

and that all applications for priority assistance must be based upon a showing of emergency requirements involving impending shutdown of service or similar serious consequences.

Currently outstanding CC ratings, even for uses now denied government aid, will be honored until used up.

The amendment of PR-28 had no effect upon the requirement of applying to CPA for approval of construction, as provided under order VHP-1, which remains in effect.

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5 Co-ops Buy Interstate's South Dakota Properties

Acquisition of South Dakota properties of the Interstate Power Co., Dubuque, Iowa, by five rural electric cooperatives entered the final stages last week as the Rural Electrification Administration approved loans totaling $2,501,000 to the co-ops to finance the transaction. Completion of the deal awaits only the approval of the Securities and Exchange Commission.

The co-ops are purchasing all Interstate facilities in South Dakota, except those in Sioux Falls and vicinity. Included in the sale are oil generating plants at Winner (562 kva.) and Gregory (219 kva.), 141 miles of transmission lines, and 316 miles of distribution lines. Interstate will receive $950,000 for these properties which were sold because of their isolation from the company's main properties in Iowa and Minnesota.

The remainder of the federal loan obtained by the co-ops is ear-marked for construction of 862 miles of new distribution lines in extensions of the acquired facilities. Though the cooperatives bid jointly for the Interstate facilities, each co-op will receive title to a portion of the properties for integration with its existing rural power system.

The purchasers are the Clay-Union Electric Corp., of Vermillion; Sioux Valley Empire Electric Association, Inc., Colman, Turner-Hutchinson Electric Association, Inc., Freeman; Rosebud Electric Association, Inc., Burke, and McCook Electric Association, Inc., Salem.

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Municipal Plant Rejected

A bond issue to finance the construction of a municipally owned power plant was voted down recently by the voters of Eunice, La. The town is served by Gulf Public Service Co., whose franchise has five more years to run.

Oklahoma Gas & Electric Has $5,500,000 Program

Oklahoma Gas & Electric Co. has announced a $5,500,000-plant expansion program. Included are a 20,000-kw. steam turbo-generator to be installed near Ponca City by the summer of 1948, and a 10,000-kw. topping unit and a 12,500-kw. steam generator to be placed in the Horseshoe Lake station near Harrah. The latter project is under construction and is to go into operation in the spring of 1947.

Transmission line and terminal facilities to deliver energy from the Ponca City installation will require an additional expenditure of approximately $978,000.

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Favor Georgia Power Co.

The Utilities Advisory Committee, created by the mayor of Columbus, Ga., to study the advisability of a municipally owned and operated power distribution system for the city, has advised the City Commission against the proposal. Eleven of the 15 members favored continued service by the Georgia Power Co.

MEETINGS

American Society for Testing Materials—Spring meeting and committee week, Benjamin Franklin Hotel, Philadelphia, Pa., February 24-28. R. J. Painter, assistant to the secretary, 1916 Race St., Philadelphia 3, Pa.

Previously Listed

Canadian Electrical Association—Winter conference. Chateau Frontenac, Quebec, January 13-15.

Agricultural Development Clinic—Fairmont Hotel, Fairmont, W. Va., January 24-25.

American Institute of Electrical Engineers—Winter meeting, New York, January 27-31.

Electrical Engineering Exposition—71st Regiment Armory, New York, January 27-31.

Edison Electric Institute—Prime Movers Committee, Van Curler Hotel, Schenectady, N. Y., February 3-4; Industrial Power and Heating Section, Hotel Continental, Kansas City, Mo., February 5-7; Transmission and Distribution Committee, Atlanta Biltmore Hotel, Atlanta, Ga., February 10-11; Meter Committee, Robert Treat Hotel, Newark, N. J., February 10-12; Electrical Equipment Committee, Atlanta Biltmore Hotel, Atlanta, Ga., February 12-13.

Missouri Valley Electric Association—Annual Power Sales Conference, Hotel Continental, Kansas City, Mo., February 5-7.

Association of Edison Illuminating Companies—Committee on Metering and Service Methods, joint meeting with E.E.I. Meter Committee, Robert Treat Hotel, Newark, N. J., February 10-12.

Pennsylvania Electric Association—Systems Operation Committee, Lord Baltimore Hotel, Baltimore, Md., February 13-14. Electrical Equipment Committee, Penn-Harris Hotel, Harrisburg, Pa., February 20-21. Transmission and Distribution Committee, Penn-Harris Hotel, Harrisburg, Pa., February 20-21.

SEC RULINGS

The Securities and Exchange Commission recently issued a series of orders affecting electric utility companies.

Sioux City Gas & Electric Co.'s proposal to liquidate and dissolve its subsidiary, Sioux City Service Co. and to distribute its assets, consisting of about $495,000 and 82 shares of common stock of Penn-Western Service Corp., to the parent company, has been approved. (Release No. 7071).

Engineers Public Service Co.'s plan for compliance with the "death sentence" provisions of the Holding Company Act has been rejected by the commission. The ruling found no fault with the essential objectives of the program and suggested how it could be modified to meet the commissioners' objections. Engineers' plan proposed the disposition of the common stock of the Gulf States Utilities Co. by offering the shares to its common stockholders under a warrant program; distribution of the common stock of the El Paso Electric Co. as a liquidating dividend; retirement of its own outstanding preferred stock at $100 a share and accrued dividends; the carrying out of statutory processes of dissolution but continuing for three years as a trusteeship, and the distribution at the end of the trusteeship of its assets to its common stockholders. "If within thirty days Engineers files a plan amended in conformity with this opinion," said the ruling, "we shall enter an order approving the amended plan and we shall apply to an appropriate District Court for approval and enforcement. The company filed a series of amendments to its plan to meet the commission's objections and the commission then set January 3 for hearing on the amended plan. (Release Nos. 7041 and 7077).

Northern States Power Co. (Minn.) and Interstate Light & Power Co. joint application for revision of Interstate's capital structure has become effective under commission authorization. To simplify its capital structure, Interstate will amend its charter to increase its authorized capital from $250,000 to $550,000, consisting of 5,500 shares of $100 par capital stock. It also will issue $350,000 of first mortgage bonds due October 1, 1975, bearing 4 percent interest. The bonds together with 30,350 additional shares of capital stock will be issued to Northern States in exchange for cancellation of $966,000 principal amount of 6 percent first mortgage bonds. Northern States will waive all right to unpaid interest amounting to $455,635 last June 30, owed by Interstate on its outstanding first mortgage 6 percent bonds. (Release No. 7065).

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Municipal Raises Wages

Richmond, Ind., Electric Lighting & Power Department has increased the wages of its employees 15 cents an hour and the monthly compensation of its salaried workers $30 a month.

NEWS ABOUT PEOPLE

Tucker Appointed Associate Editor of Electrical World

Stanley A. Tucker, who became an associate editor of ELECTRICAL WORLD January 1, is among those American engineers who are most conversant with the gas turbine.

After having covered the development of this new prime mover for the past seven years—in Europe and in the United States, for the magazine *Power* as well as other McGraw-Hill magazines—Mr. Tucker will handle gas turbines, steam, and hydroelectric generation and industrial power application for ELECTRICAL WORLD.

One of the first correspondents to report Europe's war-time engineering

S. A. TUCKER

developments for U. S. technical readers, Mr. Tucker entered the continent shortly after V-E Day for McGraw-Hill. He combed Britain, Switzerland and France for undisclosed research and accomplishments and as a representative of McGraw-Hill World News, visited the plants of British Thomson-Houston, English Electric, Brown Boveri, Sulzer Brothers, Escher-Wyss, Cie Electro-Mecanique and others. In ELECTRICAL WORLD, *Power* and other magazines, he brought McGraw-Hill readers up to date on six years of unreported work on gas turbines, high-voltage transmission, French railway reconstruction, manufacturing methods, Britain's Trading Estates, high-pressure boiler advances, hydro development plans and lightweight diesel engines. During this period, Mr. Tucker helped promote the reestablishment of a free interchange of technical information between U. S. manufacturers and the research and production officials of European firms who had been largely cut off from U. S. developments and discoveries through the war years.

Returning to the United States last summer, Mr. Tucker was assigned to the Manhattan District to promote a flow of information for all McGraw-Hill papers on the numerous industrial techniques emanating from the atomic-bomb project.

Mr. Tucker was graduated by Yale University in 1926 with a degree in electrical engineering. Thereafter he spent two years on the cadet course of the Brooklyn Edison Co., after which he joined its mechanical engineering department, which was then designing the Hudson Avenue generating station. In 1937, he joined the editorial staff of *Power* as associate editor in charge of its utility coverage. His next assignment was Europe.

He is a member of A.I.E.E., A.S.M.E., Tau Beta Pi, and is also an associate in Sigma Xi.

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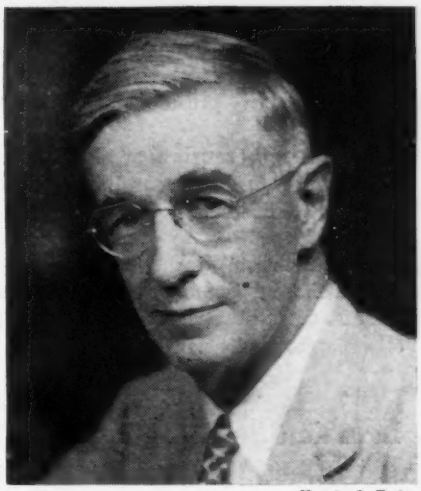
Dr. Vannevar Bush Awarded Hoover Medal for 1946

Dr. Vannevar Bush, president of Carnegie Institution of Washington, and war-time director of the Office of Scientific Research and Development, has been named 1946 winner of the Hoover Medal, jointly awarded by four national engineering societies. The award will be made during the coming winter meeting of the American Institute of Electrical Engineers in New York.

The citation for Dr. Bush reads as follows: "Engineer, educator, and administrator, who, in critical time of need, was in a most special sense an organizer, guiding spirit, and driving force of the nation's achievements in physical and medical science; to whom, for outstanding public service, is awarded the Hoover Medal for 1946."

In the award of the Hoover Medal, Dr. Bush adds one more to a list of significant awards including the Holley Medal of the American Society of Mechanical Engineers; the Edison Medal of the American Institute of



Harris & Ewing

DR. V. BUSH

Electrical Engineers, and the gold medal of the National Institute of Social Sciences. He is the author of many technical works, including contributions to electrical engineering publications and others. He is also the inventor of a differential analyser.

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Rochester Gas Elects A. M. Beebee President

Alexander M. Beebee has been named president of the Rochester Gas & Electric Corp., Rochester, N. Y., to succeed Herman Russell, who was appointed chairman of the board. Edward G. Miner was made chairman of the executive committee.

A. M. BEEBEE

Mr. Beebee began his career with

the Rochester utility while he was a student at Cornell University. He was graduated in 1915 with a degree in electrical engineering and shortly afterward sought permanent employment with the company. There were no openings in the electrical department so Mr. Beebee took a position in the gas department. Through successive promotions he moved up to the position of general superintendent of the gas department in 1927 and two years ago was made a vice-president of the company.

Mr. Russell, retiring president, was connected with Rochester Gas & Electric since 1905 and served as president since 1929. He is a former president of the American Gas Association and the Rochester Chamber of Commerce and is actively associated with many other organizations.

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Iron and Steel Engineers Elect Milburn President

L. R. Milburn, electrical engineer, Great Lakes Steel Corp., Ecorse, Mich., has been elected president of the Asso-

L. R. MILBURN

ciation of Iron and Steel Engineers for the year 1947.

Mr. Milburn was graduated from the University of Michigan and served in the United States Army during World War I. After experience with the General Electric Co., he became identified with the Louisville (Ky.) Gas & Electric Co. and in 1929 joined the Great Lakes Steel Corp. He was appointed to his present position in 1935.

Other officers elected by the association include: vice-presidents, A. J. Fisher, Bethlehem Steel Co., and C. H. Williams, Carnegie-Illinois Steel Corp.; treasurer, A. S. Glossbrenner, Youngstown Sheet & Tube Co., and secretary, John F. Black, Atlas Steels, Ltd.

Boulware Named Manager of New G.E. Affiliate Unit

General Electric Co. has established an affiliated manufacturing companies department and appointed L. R. Boulware, vice-president who formerly was on the president's staff, as general manager.

E. J. Harrington, on the staff of Mr. Boulware since October, 1945, has been

L. R. BOULWARE

appointed manufacturing manager of the new department and Roy W. Johnson, formerly vice-president in charge of sales for Telechron Inc., has been appointed marketing manager of the new department.

The manufacturing affiliates include Carboloy Co., Inc., General Electric X-Ray Corp., Hotpoint Inc., Locke Insulator Corp., Monowatt Electric Corp., Telechron Inc., and Trumbull Electric Manufacturing Co.

Mr. Boulware joined General Electric in 1945, having been operations vice-chairman of the War Production Board, with which Charles E. Wilson, president of General Electric, had been associated from 1942 to 1944, the last year as executive vice-chairman. Previous to his service with WPB, Mr. Boulware had been vice-president and general manager of both the Carrier Corp. and the Celotex Corp. He had also been general sales manager of the Easy Washing Machine Corp., Syracuse, N. Y. Prior to his connection with the Easy Washing Machine organization he spent five years in Michigan, engaging in manufacturing, holding the position of purchasing agent and factory manager.

During the war Mr. Harrington served as a vice-president of the Curtiss-Wright Corp., and previously acted as an executive and industrial engineer in aircraft and automotive companies.

Before his service as head of the Facilities Bureau of the War Production Board during the war, Mr. Johnson had marketing assignments with Schick Inc. and General Electric.

OBITUARY

Oscar T. Crosby

Oscar T. Crosby, one of the pioneers in the electrical industry and Assistant Secretary of the Treasury under President Woodrow Wilson, died at Warrenton, Va., on January 2 at the age of 85. His first connection with the electrical industry was early in 1887, when, on the invitation of Frank J. Sprague, he obtained a six months' leave of absence from his post at New Orleans as a military engineer to become associated with him. Shortly afterwards Mr. Crosby resigned from the army and joined the Sprague Electric Railway & Motor Co. as Mr. Sprague's assistant and in this capacity took an active part in the early development of electric traction. He served as general superintendent of the company and general manager of the railway department of the General Electric Co. before the close of the nineteenth century. Subsequently he headed utilities in Washington, D. C., Wilmington, Del., Chester, Pa., and Trenton.

Mr. Crosby was born in Ponchatoula, La., and was graduated from the United States Military Academy at West Point, N. Y., in 1882. He was appointed director of the Commission for Relief in Belgium under Herbert Hoover in 1915. As Assistant Secretary of the Treasury in 1917 he had charge of loans to the Allied powers and for two years thereafter was in Europe as president of the Inter-Allied Council on War Purchases and Finance.

Mr. Crosby was widely known as a lecturer and author. He collaborated with Doctor Louis Bell, distinguished electrical engineer and at the time editor of ELECTRICAL WORLD, in producing "The Electric Railway," published in 1892.

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▶ CHARLES D. GANT, district manager of the Texas Power & Light Co. in Commerce, Tex., died on December 27 after an illness of several months. Born at Eureka Springs, Miss., in 1888, Mr. Gant was employed by Texas Power & Light for 34 years and for the past 17 years had been in commerce.

▶ NIMROD H. JOHNSON, 72 years old, manager of the municipal light plant at Richmond, Ind., for four years, and vice-president and general manager of the old Richmond Light, Heat & Power Co., for 13 years, died on December 11.

NOW, 1947

LINE MATERIAL COMPANY

GENERAL OFFICES MILWAUKEE 1, WISCONSIN

January 1, 1947.

TO OUR CUSTOMERS:

Thanks for your business in 1946. We appreciate your confidence and recognize the responsibilities you have placed with us.

In 1946 we shipped more distribution equipment than ever before . . . but still not enough to meet all of your immediate requirements.

With 1947 ahead of us, we will deliver more L-M products to you.

New machinery and equipment have been added to all of our factories; many new men and women have been trained for our various departments.

Our manufacturing and engineering are continuously improving which assures you of better, more efficient, and more uniform production.

New methods of packing, handling, and expediting shipments will mean faster deliveries.

Here at Line Material we make every effort to get more and better L-M equipment to you.

Best Wishes that 1947 may be a year of progress and success for all of us,

Sincerely,

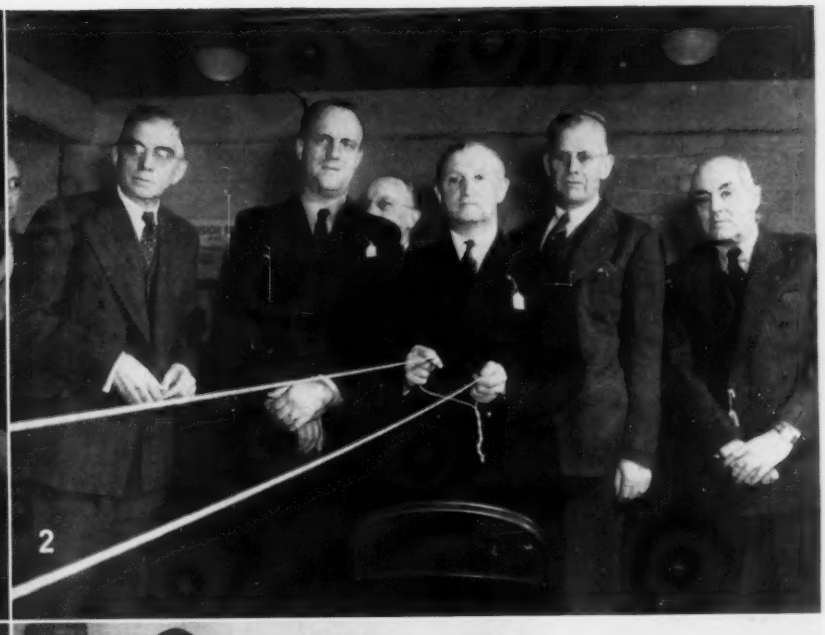
W. D. Kyle

WDK:CB

W. D. Kyle, President.

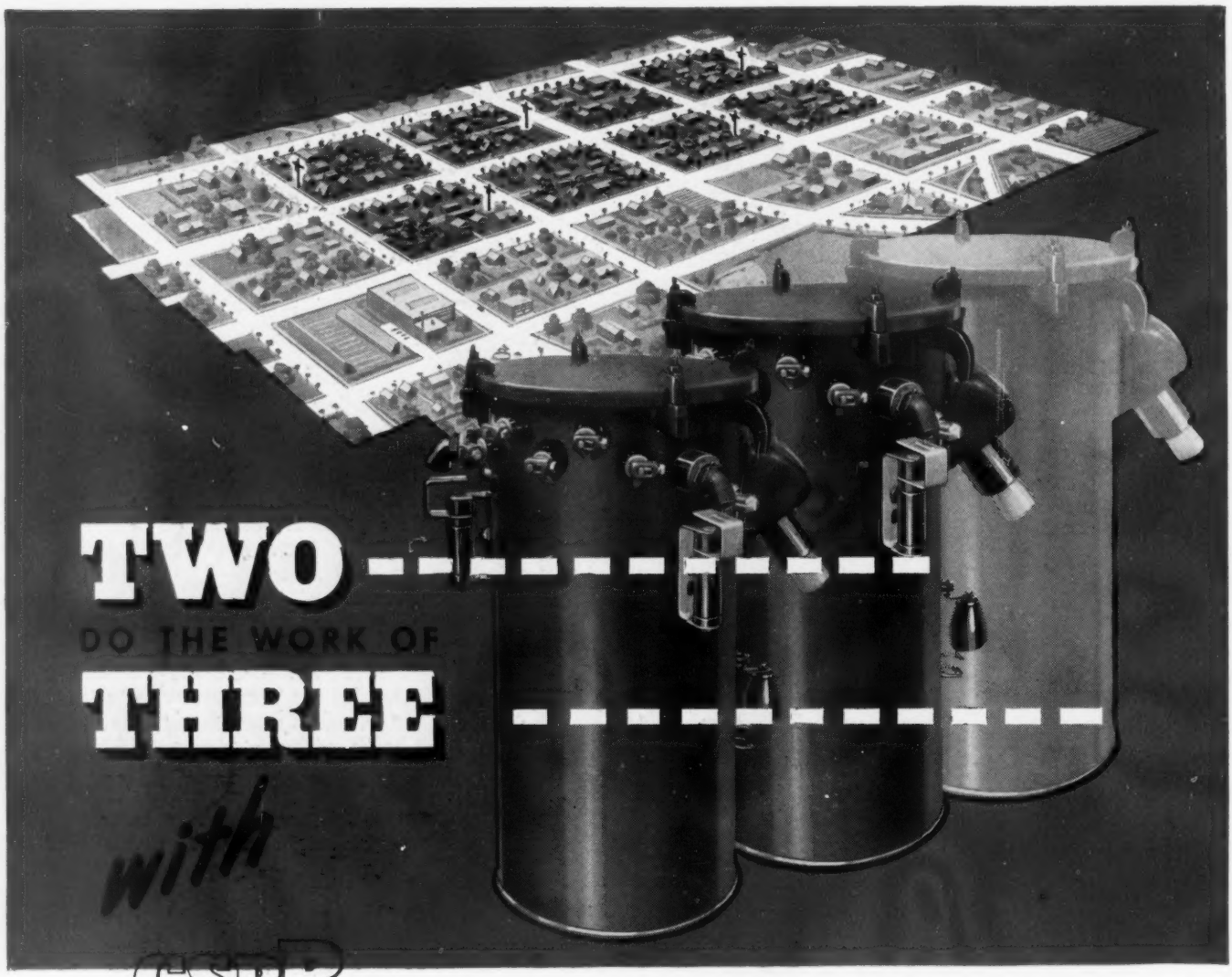
THE INDUSTRY IN PICTURES

ALL ABOARD FOR AN ELECTRICAL CHRISTMAS—Feature of the Christmas display of the Cincinnati Gas & Electric Co., which had as its theme, "Someone you know needs something electrical," was a scale model electric railroad patterned after the Cumberland Division of the Baltimore & Ohio Railroad, which owns the model and supplied the operator for it. The main line of the model is 105 ft. long, and total trackage 600 ft. The lobby of the utility's main office was used for the exhibit, which attracted thousands of persons



CEICO DRIVERS MUST BE SAFE DRIVERS—Quiz programs, motion pictures, and apparatus for testing driving aptitudes were featured at five safety meetings sponsored for Cleveland Electric Illuminating Co. drivers. One of the motion pictures was of actual company accidents.

1. William Frick, Transportation Department, explains operation of aptitude testing machine to Harry Bellett, Overhead Lines Department
2. Michael Kwacek, Customers Service Department, uses ropes to line up wooden pegs in depth perception test
3. Checking his alertness to traffic signals while driving is serious business for F. P. Jones, Sales Department
4. E. K. Tolhurst, left, Service Department, and John Gomersall, Salvage Department, look into lighted tunnel as they demonstrated their ability to see in glaring light
5. President Elmer L. Lindseth receives a silver dollar from Patrolman Peter Skirbunt of the Cleveland Police Department for answering a question correctly at a safety quiz session



CSPB TRANSFORMERS FOR SECONDARY BANKING ...INSTALLED CAPACITY REDUCED AS MUCH AS 35%

Why install THREE transformers, when TWO will do the job—and maintain BETTER continuity of service?

The new Westinghouse system for secondary banking—with CSPB Transformers—reduces investment and saves one-third or more in installed capacity. It takes full advantage of load diversity, without the handicaps associated with conventional banking schemes.

Cascading is prevented, and sectionalizing of faults is automatic, through the use of a second, built-in, thermally co-ordinated breaker... added to the other features of the CSP Transformer.

Operation is simplified by signal lights—one for each of the internal breakers—permitting quick location of faults or overloaded sections. Advance indication of approaching overloads is also provided.

For full details on CSPB banking, ask for Bulletin B-3777. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania.

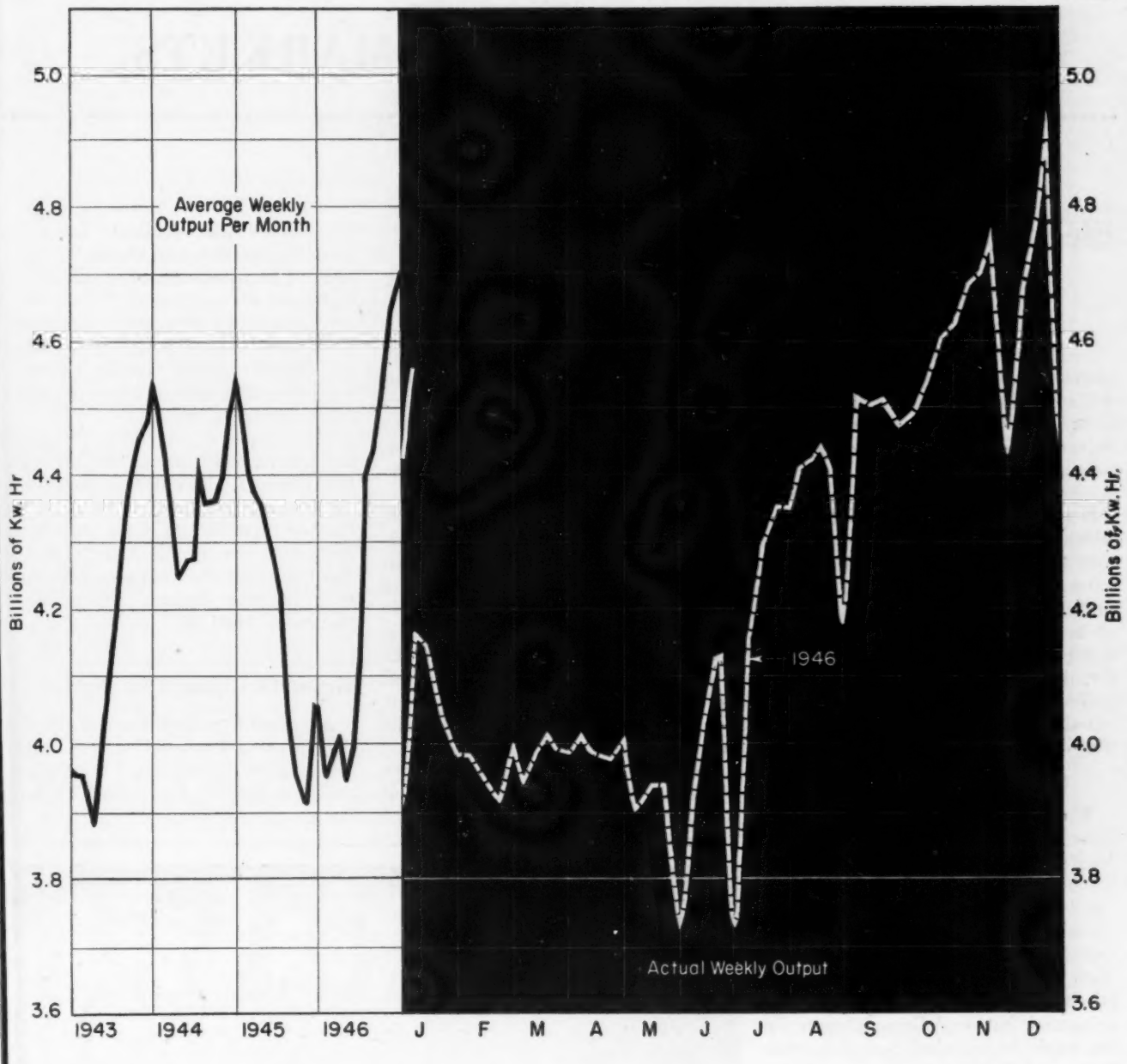
FOR RADIAL CIRCUITS

Ten years' successful service has proved the economy of the CSP (Completely Self-Protecting) Transformer for conventional radial circuits. These built-in features are fundamental in meeting modern distribution requirements: complete lightning protection; protection against burnout; automatic load indication; protection against line lockout. J-70482

Westinghouse

CSPB

DISTRIBUTION TRANSFORMERS



Operating Revenues Rise 9.0 Percent in October

Electric operating revenues of the larger privately owned electric utilities in the United States in October, 1946, were $281,513,000, as compared to $258,242,000 in October, 1945, an increase of 9.0 percent, according to figures released by the Federal Power Commission.

Revenue deductions (including operating expenses, depreciation and taxes) were $219,148,000, or 16.1 percent over those of October, 1945.

Gross income, including other utility operating income, amounted to $67,788,000, a decrease of 10.3 percent for the month. Net income, however, due to decreased income deductions, was up 14.2 percent to $46,505,000 compared to $40,725,000 reported for October, 1945.

Electric Output Curve Turns Upward

During the first week of the new year, the electric output curve moved upward, according to figures released by the Edison Electric Institute.

The amount of electrical energy distributed by the light and power industry during the week ended January 4, 1947, amounted to 4,573,807,000 kw.-hr., comparing with 4,442,443,000 kw.-hr. in the last week of 1946, that ending December 28. During the week ended January 5, 1946, the amount of electrical energy distributed totaled 3,865,362,000 kw.-hr., this year's figure representing an increase of 18.3 percent.

All the geographical regions reported increases, the largest being reported by the Southern states, which showed a rise of 26.3 percent. The Pacific Coast states ran a close second, with an increase of 24.1 percent.

Weekly Output, Millions Kw.-Hr.

1947		1946		1945	
Jan. 4	4,574	Jan. 5	3,865	Jan. 6	4,427
1946		1945		1944	
Dec. 28	4,442	Dec. 29	3,759	Dec. 30	4,226
Dec. 21	4,940	Dec. 22	4,239	Dec. 23	4,617
Dec. 14	4,778	Dec. 15	4,154	Dec. 16	4,563
Dec. 7	4,673	Dec. 8	4,097	Dec. 9	4,538
Nov. 30	4,448	Dec. 1	4,043	Dec. 2	4,524
Nov. 23	4,765	Nov. 24	3,841	Nov. 25	4,369
Nov. 16	4,700	Nov. 17	3,985	Nov. 18	4,450
Nov. 9	4,682	Nov. 10	3,948	Nov. 11	4,397
Nov. 2	4,628	Nov. 3	3,899	Nov. 4	4,355
Oct. 26	4,602	Oct. 27	3,937	Oct. 28	4,358
Oct. 19	4,540	Oct. 20	3,915	Oct. 21	4,345

Percent Change from Previous Year

	Jan. 4	Dec. 28	Dec. 21
New England	+13.2	+10.6	+11.7
Mid-Atlantic	+10.7	+10.6	+ 9.1
Central Industrial	+16.5	+17.4	+15.3
West Central	+17.9	+14.1	+11.4
Southern States	+26.1	+26.3	+25.5
Rocky Mountain	+13.7	+ 9.2	+ 7.2
Pacific Coast	+24.1	+26.0	+23.1
Total United States	+18.3	+18.2	+16.5

MANUFACTURERS & MARKETS

Electrical Union Drafts 1947 Demands, Substantial Wage Increase Sought

Demands for substantial increase in wages plus a comprehensive health, welfare and pension plan will be placed before General Electric, Westinghouse, Sylvania and the electrical division of General Motors by the United Electrical, Radio and Machine Workers, C.I.O., it was learned this week. The demands, which will cover 225,000 workers in over 200 plants, were drafted by delegates in Pittsburgh and more recently in New York. James J. Matles, director of organization for the union, stated it hoped to attain its objectives without a strike, and added that it had the same hopes last year. The 1946 negotiations culminated in the longest strikes, to that date, in the electrical industry.

Union Defense Fund Strong

When questioned about the union's financial ability to undertake another long strike, Mr. Matles replied that its general fund and defense fund were "at least as strong as they ever were."

He emphasized, however, that the union had no strike plans at present. None of the union's demands were put forward in specific terms. Mr. Matles reiterated that no dollars-and-cents figure would be broached to the manufacturers, but that the unions general goal was to offset an estimated $11.72 loss in purchasing power of the electrical workers in the last two years.

Last year, he continued, the union had estimated the reduction in take-home pay of its members after V-J Day had declined $13, and that the final settlement of an 18½-cent per hour increase "had compensated for only $7.40 of this, leaving a net loss of $5.60." Increased living costs during the year had brought the total decrease in "real wages" to $11.72, he stated.

In contrast to other unions, Mr. Matles declared, the electrical union has fixed no specific amount of payroll deduction or royalty as to their health, welfare and pension goal. All programs would be employer-financed and the objectives would include:

Life insurance equal to the worker's annual income, disability benefits equal to two-thirds of the average weekly earning for a period of 13 weeks; surgical, hospital and medical benefits and retirement pay sufficiently high to bring the monthly total of company and federal social security payments to "no less than $100 per month."

The union has taken no strike vote, he continued, has filed no Smith-Connally Act strike notices, and contemplated none, pending full discussion of its position with all the companies. He dismissed as insignificant, in so far as it concerns the electrical workers, the portal-to-portal wage issue touched off by the Mt. Clemens Pottery Co. case. He did state that five "friendly" suits had been filed.

Mr. Matles stated that negotiations on the 1947 contracts "should be on hot and heavy within a couple of weeks." He implied that demands would be based on specific price increases. Some of those he stated were: generation and transmission equipment, 30 percent; wire and cable, 74 percent; fractional horsepower motors, 52 percent; radios, 87 percent; washing machines, 28 percent; vacuum cleaners, 33 percent; and refrigerators, 36 percent.

Wage demands and other provisions which the union hopes to include in the 1947 contracts affect all four companies. The termination date of the General Electric and Westinghouse contracts is April 1, that of Sylvania Electric is April 30, while the wage reopening date of a two-year contract with General Motors is April 28.

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Reports Change in Name

Announcement has been made that the Thornton Tandem Co., Detroit, has discontinued that name and now is operating as Detroit Automotive Products Corp.

THEY CAME AND SAW—Industry representatives flocked to Baltimore on the date of the famous Locke Oyster Roast to ascertain where insulator production is at the present time, what is to be done to increase it, and what is contemplated in future research. Among those that came and saw were F. E. Winslow, G.E.; E. F. Mecklin, Locke; F. G. Toye, G.E.; T. S. Hudson, E. L. & P.; E. A. Oas, G.E. Supply; A. H. Burnham, Locke; R. C. Wenz, Duquesne Light; C. C. Baltzly, Philadelphia Electric; O. F. Haas, G.E.; R. L. Lefevre, G.E. X-Ray; and the host, R. G. Bellezza, president of Locke Insulator

Portal-To-Portal Pay Fight Enters Electrical Manufacturing Field

JULIUS C. MEIER, *Manufacturing Editor*

As portal-to-portal pay suits against industry last week nearly reached the two billion dollar mark and five companies in the electrical manufacturing industry felt the weight of C.I.O. demands for "nominal" sums of a million each, the National Association of Manufacturers appeared to be leading the fight to block the flood of new suits with a program of clarifying legislation. The chamber, after a survey of its membership, proposes the following amendments to the labor standards act:

"First, because of its urgent importance, an amendment that will remove present uncertainties as to hours worked as a basis for overtime compensation. The opinions of the United States Supreme Court on application of the so-called portal-to-portal principle are involved here. The law should permit recognition of customer, practice or agreement in the locality, industry or particular place of employment. Thus if there is a collective-bargaining agreement between the employer and the representative of his employees as to when compensable pay time starts and stops, that agreement should control. Such a provision in the law would remove present uncertainties.

"Second, an amendment that will restore the long-standing definition of interstate commerce and thus prevent the progressive extension of the coverage of the law in unwarranted directions.

"Third, an amendment to afford relief to an employer from the mandatory double liabilities where an unwitting violation or other mitigating circumstances are found.

"And fourth, an amendment to authorize employers and employees to make compromise settlements in cases of disputes arising under the law. As it is now, the courts will not recognize the validity of such compromise settlements if cases come before them."

Four Electric Companies Cited

In the electrical industry, suits to date have been filed against Westinghouse Electric Corp., General Electric Co., Sylvania Electric Products, Inc., General Cable Corp., and General Motors Corp.

In the portal-to-portal pay battle, the United Mine Workers won the first round when the Supreme Court rendered its decision in the Tennessee Coal Co.'s case in 1942. In that case the Court held that underground travel constituted work and therefore should be included in the term work as defined by the Fair Labor Practice Act of 1938.

All portal-to-portal pay demands date back to the Federal Fair Labor Practice Act of 1938, the wage and hour law. This act by law states that a statutory work week shall be 40 hours. It is under the latter stipulation that labor unions have gone to the Court with the demand for portal-to-portal pay retroactive to 1938.

Mt. Clemens Ruling

The Supreme Court in the Mt. Clemens pottery case ruled that the statutory work week include "all time during which an employee is necessarily required to be on the employer's premises." This is the view upon which the present labor action is based. The time involved in these cases includes that between entering the company's gate and arriving at the place of work, changing clothes and then preparing to start actual production. At the close of the day it also includes washing up at the end of the day's work and walking to the plant gate. This time in many instances approaches one hour per employee per day.

In the Mt. Clemens case, the Supreme Court decided, "It is appropriate to apply a *de minimis* doctrine so that unsubstantial and insufficient periods of time spent in preliminary activity need not be included in the statutory work week."

The case was referred back to the U. S. District Court in Michigan for a ruling on how much, if any, back pay is due employees of the company. In spite of the fact that there is as yet no court ruling as to how much time is insufficient or unsubstantial, the unions have already begun an active campaign for back portal-to-portal pay.

Settlements out of court, even if the union waives further claims, are not expected to solve this problem. Any settlement may still be subject to additional payments if the court holds that settlement failed to meet requirements of the law. This point was settled by the Supreme Court in the Brooklyn Savings Bank vs. O'Neil case wherein liquidated damages under the Fair Labor Standards Act could not be waived by agreement between the employer and employees.

One of the interesting results of the suits is that of the Rockwell Manufacturing Co., one of the many defendants in suits for portal-to-portal pay, in filing a counter action against the American Federation of Labor for $15,000,000 charging loss of production in slowdowns by workers.

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Lead Shortage Will Continue in '47, Wormser Predicts

Domestic supply of lead, both mined and scrap, next year will fall 255,000 tons short of meeting the estimated 1947 requirements of American industry, Felix E. Wormser, secretary of the Lead Industries Association, predicted at a recent gathering of the Northwest Mining Association in Spokane, Wash.

U. S. lead output next year, it is estimated, will aggregate 800,000 tons, 450,000 tons from mines and 350,000 tons in recovery from scrap. The 1947 requirements of industry, it is estimated, will be at least 1,055,000 tons.

Mr. Wormser stressed the necessity for greater mine production and exploration. In the meantime the short supply gap will have to be filled by imports from Mexico, Canada, Peru and Australia, he declared.

Concerning the 1947 demand picture, Mr. Wormser felt that 300,000 tons would be needed for the manufacture of storage batteries. The electric cable industry—lead-covered cable—for telephone toll cables, and for underground electric power conductors, is expected to consume 210,000 tons.

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Workers Earn $49.41 a Week

Workers in the electrical equipment industry made average weekly earnings of $49.41 in September, 1946, according to figures released by the U. S. Department of Labor, this figure representing an increase of 1.8 percent over the preceding month and of 17.8 percent over September, 1945. Average weekly hours worked in September amounted to 40.5, representing an increase of 0.6 percent over August and a decrease of 0.6 percent under September, 1945.

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Makes Change in Name

Atlas Aircraft Products Corp., Long Island City, N. Y., has changed its name to Cyclohm Motor Corp. Charles Wohlstetter, president, explained that whereas the company formerly specialized in engine generators, its expanding production now includes special industrial and other electric motors.

Allis-Chalmers Strike Cost Reaches $36,500,000

Monetary losses in the eight-month-old Allis-Chalmers strike at West Allis have been placed at approximately $36,500,000. Most of this is attributed to loss of wages, production and taxes and additional police costs.

Striking employees lost $19,000,000 in wages during the first 175 days of the strike which is today, January 11, entering its 260th day. The company's loss for the first three quarters of 1946 is reported to approximate $17,000,000. The loss for the fourth quarter has not been computed. Employees of the State Commission in Madison estimate the loss to West Allis from state income tax sharing will approximate $287,590. The amount Milwaukee County will lose from this source will be $64,000. To this is added the overtime payments of regular police plus the additional cost of special police and cost of police hospitalization and equipment damaged during fighting on the picket line.

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Worthington Pump Sets Firm Price Basis on Products

Announcement was made at the turn of the year by Clarence E. Searle, president of the Worthington Pump & Machinery Corp., Harrison, N. J., that effective January 2, 1947, prices of all Worthington products would be quoted on a firm basis, that is, not subject to any increase above the prices in effect on the date the order is placed, except for the prices of major purchased components, such as motors and other electrical equipment, and steam condenser tubes. On such items it will be Worthington's policy to quote similar price protection as that required by its suppliers.

The firm price basis applies to Worthington's entire operations with the exception of two subsidiaries which are especially dependent upon copper and steel plate. As soon as they can procure their requirements with reasonable assurance of no additional cost increases, the firm price policy will also be adopted by the subsidiaries.

Mr. Searle expressed confidence in the business outlook as it affects demand for the products of his company, which cover a broad field of power plant machinery, air-conditioning and refrigeration equipment, diesel and gas engines, road construction machinery, motors and generators.

The principal cause of uncertainty in the business situation, as Mr. Searle views it, is the fear on the part of industrial buyers of a continued upward trend in costs. With the rapidly increasing upward trend in both labor and material costs during the past year, the price protection policy followed by many industrial companies, of invoicing at the price in effect at the time of shipment, was the only expedient way of meeting the situation. In the machinery field, however, an equally important factor is the effect of prices in a determination on the part of buyers as to whether or not to proceed with plant additions and new projects requiring machinery. If prices of individual machines become too high, they are automatically priced out of the market.

It is the hope of the Worthington Pump & Machinery Corp.'s management that the firm price basis of quoting will accelerate a return to normal business contractual procedures in the sale of all industrial equipment, and thus be a contribution to the stabilization of the national economy.

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Argentine Trade in Electric Machinery, 1st Half '45

The value of Argentine trade in electrical machinery in the first half of 1945 and the increase or decrease compared with the first half of the preceding year are shown in the accompanying table.

Trade with Argentina

Jan.-June 1945
(Thousands of Pesos)

IMPORTS	VOLUME	% CHANGE OVER 1944
Dynamos, motors over ¼ hp	126	−594
Dynamos, motors up to ¼ hp	1	− 7
Cable, wire over 5 mm., covered with cotton, rubber, etc.	55	+ 55
Cable, wire up to 5mm. covered with cotton, rubber, etc.	810	+708
Cable, wire up to 5 mm., lead-covered	28	− 15
Cable, wire, enameled	1	− 38
Other electric wires and cables	273	+250
Flex, covered with cotton, wool, etc.	376	+246
Telephone cables, underground, lead covered and steel or iron armored	58	+ 52
Telephone cables, iron or steel, covered with cotton, gutta-percha, etc.	627	+167
Parts for accumulators, batteries	188	+104
Accumulators for motor vehicles	29	+ 29
Batteries	16	− 5
Ammeters, voltmeters	6	− 40
Bulbs for lamps, valves	24	− 14
Radiotelephone apparatus	1	− 14
Receiving sets	32	− 28
Amplifiers	22	+ 12
Loud-speakers, metal	1	+ 8
Radiotelephone parts	169	+ 59
Telephones	26	− 77
Telephone material	62	− 95
Telegraph material	13	+ 6
Switches, circuit breakers, cut-outs, fuses, etc.	15	− 31
Change-over switches	10	−130
Incandescent lamps	1,557	+993
House-service meters	33	−653
Insulating tubes	2	− 8
Other elec. materials	618	−395
EXPORTS		
Accumulators, batteries & parts	53	−190
Telephone apparatus, accessories	248	+188
Radio apparatus, accessories	125	− 10
Lamps	2	− 48
Other elec. materials	383	−462

Duro Test Concludes Pact with British Organization

Duro Test Corp., North Bergen, N. J., has entered into an agreement with Duralite, Ltd., of London, England, under which the American firm becomes the largest shareholder in the British company, in exchange for rights to Duro Test manufacturing processes in Great Britain, Ireland, Australia and India.

Walter H. Simson, president of Duro Test, announced conclusion of the negotiations, whereby Duro Test receives 33,000 ordinary shares of £1 par value of Duralite, Ltd., in exchange for an "interest in certain engineering assets" used in the manufacture of fluorescent lamps.

A plant has been leased from the British government at Spennymore, 250 miles from London, and is being rapidly reconverted. The company plans to produce fluorescent lamps, starters and ballasts. The plant is expected to be in production by early spring.

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Capacitor Business Up 250 Percent in 5 Years

Greater use of power factor correction in pole type capacitors by public utilities, the general shift to the capacitor type motors in refrigerators and other appliances, an increase of fluorescent lighting, and the increased market for electronic devices has boosted the net sales of Cornell-Dubilier Electric Corp. to $15,524,518 for the fiscal year ending September 30, 1946, from the 1941 total, which was $6,450,506. In releasing the figures, Octave Place, president of the corporation, pointed out that the 1946 fiscal year started only a few days after V-J day and that production during the first few months was affected by materials shortages and strikes generally within the industry.

The 1946 sales, 99 percent of which represents civilian business, compares with $19,851,745 for the same period in 1945 when the company was engaged chiefly in war work.

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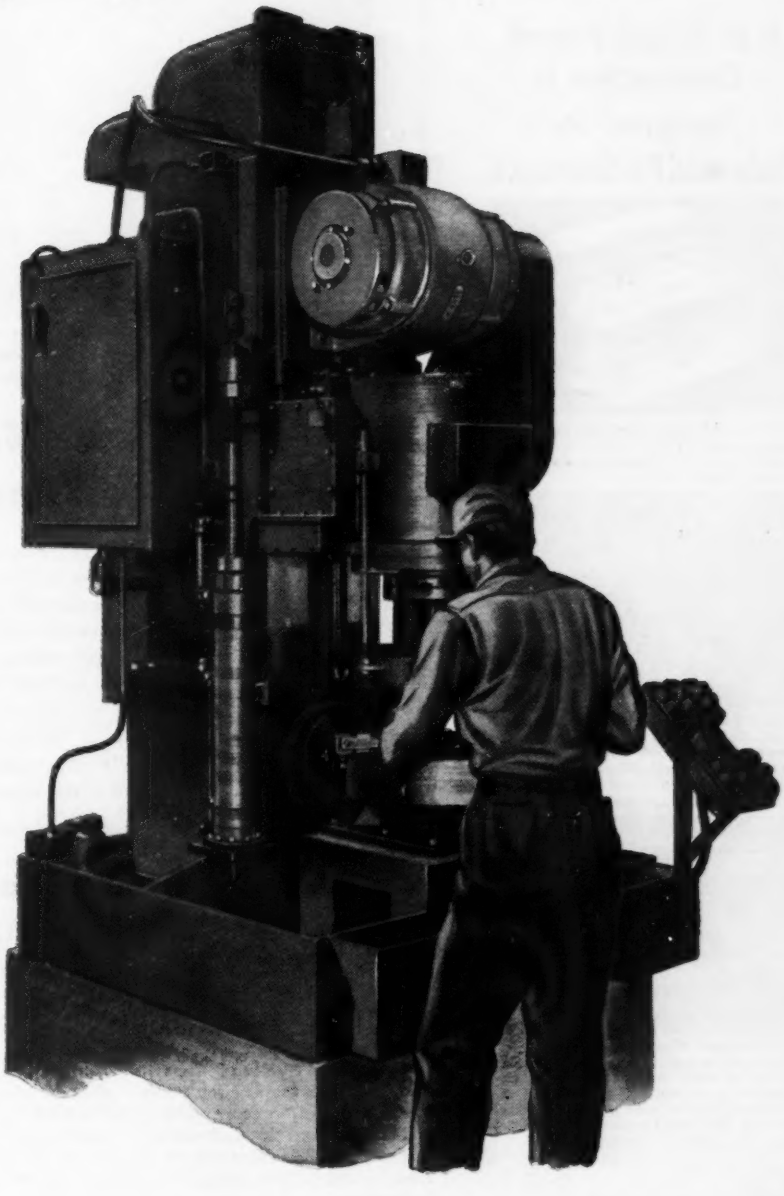
Griswold Has New Owners

Announcement has been made of the transfer of ownership of The Griswold Manufacturing Co. of Erie, Pa., to new owners. The lines of production and policies will continue as heretofore and the same operating and sales personnel will be maintained. I. Tachna will be president and general manager of the company, which will be known as Griswold Manufacturing Co.

SEE FAIRBANKS-MORSE FIRST FOR MOTORS



ON countless difficult jobs Fairbanks-Morse Motors have proved their outstanding qualities. However exacting the requirements, however heavy the service, users find that these motors have the efficiency and the stamina that mean economical, uninterrupted power.

You, too, can invest in Fairbanks-Morse Motors with confidence. Fairbanks, Morse & Co., Chicago 5, Illinois.

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Diesel Locomotives • Diesel Engines
Scales • Motors • Pumps • Generators
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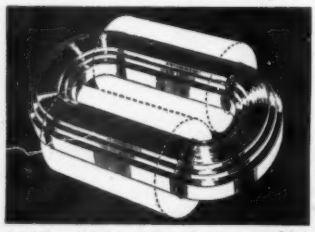
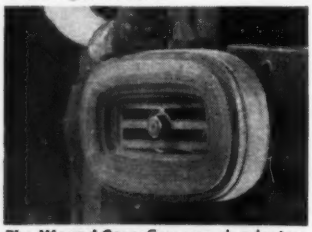
GET THE *Balanced Performance* of L-M ROUND-WOUND TRANSFORMERS

L-M Round-Wound Construction is Designed for Balanced Performance



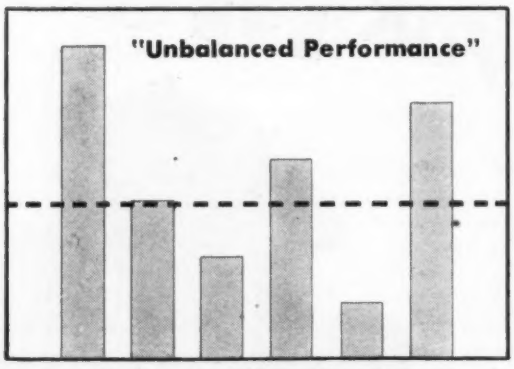
L-M Round-Wound Transformers combine evenly wound *Round* coils with a *Wound* core in eliptical shape approaching an ideal magnetic circuit.



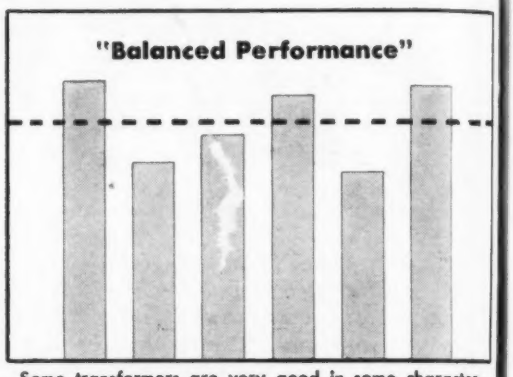
The Wound Core Core wound under tension, clamped, and annealed; not cut or rewound after annealing. The steel is worked in the direction of mill rolling and air gaps are eliminated. Results: lower exciting current, smaller dimensions, and lighter weight.

The Round Coils Evenly wound, directly on a paper tube around core; generous insulation is never damaged by hammering or shaping. Small mean turn diameter permits fewer turns, lowering resistance and reactance—giving less impedance, better regulation.

Get the Whole Story. Ask the L-M Field Engineer for the facts on Round-Wound Transformers; or send for Bulletin RW-421. Write Line Material Company, Transformer Division, Zanesville, Ohio.



By careful design and through the advantages of Round-Wound construction, it is possible to get a better balance of characteristics in L-M Round-Wound Transformers. That is what balanced performance means.



Some transformers are very good in some characteristics, but less desirable in others. Sacrificing some characteristics in order to get excessively good performance in others results in unbalanced performance.

Why L-M ROUND-WOUND Transformers are Balanced for Maximum Performance

● L-M Round-Wound Transformers are designed to provide an overall balance in *all* the electrical characteristics you require in a distribution transformer. Line Material Company recognizes the fact that a good transformer is a series of compromises. Manufacturers know that it is possible to build a transformer that is exceptional in one or two performance characteristics, but this is done at the expense of some other characteristic equally important to the efficient, economical performance of the transformer.

It is known, for example, that the use of excessively large cores will offer exceptionally low exciting current and core loss. The increase in core steel, however, requires the use of a larger mean turn diameter coil, resulting in higher reactance drop, higher impedance, and poorer regulation.

L-M Round-Wound design assures you maximum overall performance without neglecting any important performance characteristic.

L-M Round-Wound Transformers are made in 1½ to 25 Kva, in all distribution class voltages including 14,400 volts, and meet EEI and NEMA standards.

These are the Important Characteristics to Balance for Maximum Transformer Performance

● **Impulse Strength.** Round coils permit winding without hammering to shape, eliminating tight corners and risk of damaging the insulation. Result: *higher average impulse strength.*

● **Short-Time Overload Capacity.** Round-Wound construction gives ample circulation of oil in the passages between the cruciform core and the coil, around the exposed coil surface, and through specially designed ducts wound in the coil. This extensive oil circulation assures exceptional cooling. Thus, a high short-time overload capacity is gained.

● **Short Circuit Strength.** Short circuits tend to pull rectangular coils into a circular shape, which may result in damaged or weakened coils. Round coils have fundamentally superior strength characteristics because their shape provides maximum short circuit strength, contributing greatly to the long life of Round-Wound Transformers.

● **Regulation.** L-M Round-Wound construction provides lower resistance and reactance drop, resulting in better regulation than conventional rectangular construction. Revenue to the utility is increased because of higher secondary voltage and greater kilowatt hour output.

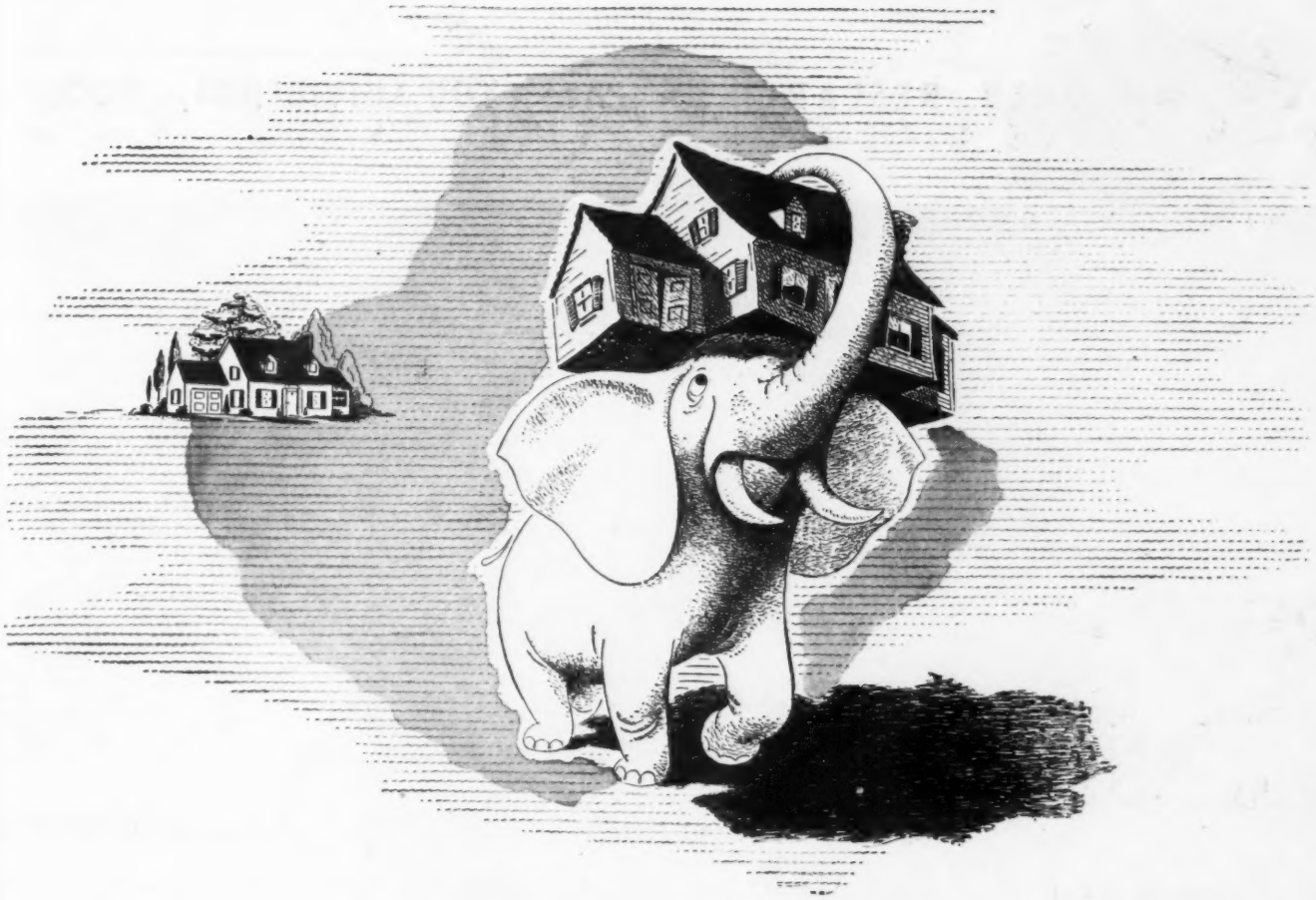
● **Loss Ratio.** Improved ratio of losses with lower total losses are achieved by L-M Round-Wound design without sacrificing the Round-Wound advantage of low exciting current and improved regulation.

● **Exciting Current.** Round-Wound Transformers permit the lowest exciting current compatible with other performance characteristics. Because exciting current is a wattless current and a direct factor in system capacity, it is an important consideration. Round-Wound core construction offers consistently low exciting current in all ratings.

LM

LINE MATERIAL
TRANSFORMERS

L-M DISTRIBUTION EQUIPMENT INCLUDES: Distribution Transformers • Fuse Cutouts and Fuse Links • Lightning Arresters • Oil Switches • Pole Line Hardware • Line Construction Specialties • Underground Equipment • Fibre Conduit • Street and Airport Lighting Equipment • Wired Radio Control Equipment • Capacitors



white colonial, 1946 white elephant, 1956

don't let today's dream home become tomorrow's disappointment . . .

because of inadequate wiring

The fate of new homes today is not only vitally important to the owner, but to the many businesses that have a stake in building and equipping them.

Nobody has a greater stake than the electrical industry, for it is upon customer acceptance of electrical service and its many advantages that power loads are built and maintained. Realizing this, America's power suppliers have played a leading part in the promotion of adequate wiring — the key to increased use of electric power and more satisfactory performance of electric equipment and appliances.

As a result of these campaigns, many homes that might have been *built obsolete* because of inadequate electrical planning are now actually being *built for tomorrow* . . . ready for the appliances and conveniences to come.

To help power suppliers in this essential work, G.E. has prepared a number of hard-hitting booklets for home builders. They include: (1) *Electrical Modernization Guide* — a factual, useful guide to practical wiring; (2) *Farm Wiring Guide* — planning every step of farm electrification in complete detail; (3) *Home Wiring Chart* — a fascinating way for homeowners to determine the electrical needs of their own homes; and (4) *Home?* — the brand new, 32-page book printed in beautiful colors, a *must* for forward-looking homeowners.

Sample copies of these, and other helpful aids are available to you now. Check the ones you need, on the coupon, and mail it today. They can do wonders for the promotion of adequate wiring in your community.

Section AW11-1-9
Appliance and Merchandise Department
General Electric Company
Bridgeport 2, Connecticut

Please send sample copies of the materials checked

- ☐ Electrical Modernization Guide
- ☐ Farm Wiring Guide
- ☐ Home Wiring Chart
- ☐ Home?

Name_____ Title_____

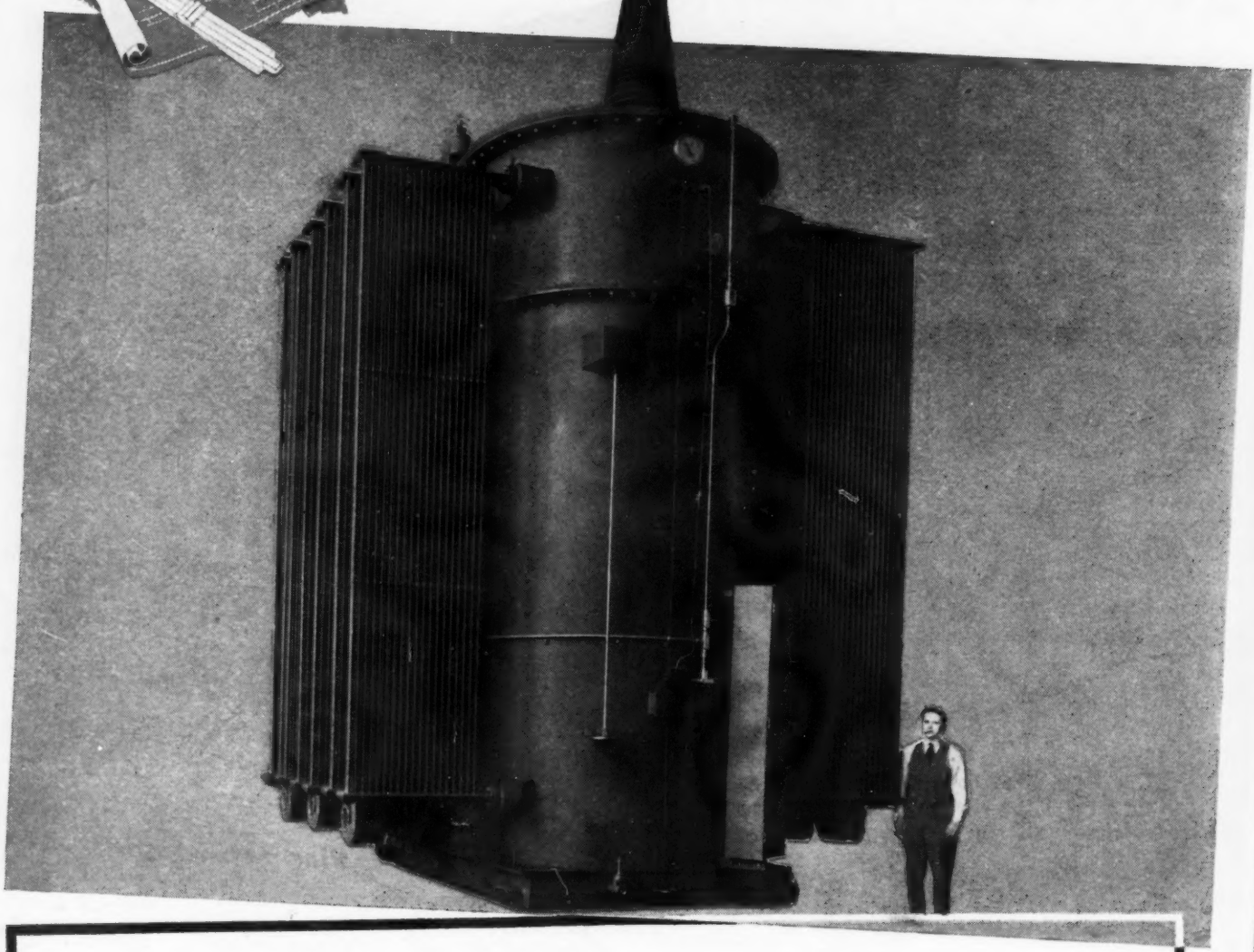
Company_____

Address_____

City_____ State_____

GENERAL ELECTRIC

MOLONEY RESEARCH PAYS YOU DIVIDENDS, TOO!



Through long life and trouble-free operation, Moloney Power Transformers will help keep your operating costs at a minimum. These are a result of the practical application of the wealth of data obtained from constant research. Uniformly high impulse strength, efficient cooling of windings and core, rigid bracing of core-and-coil units, anchoring of leads in heavy insulating tubing . . . these and many other features of Moloney Power Transformers are products of extensive research that means lower operating costs.

Over 50 years of manufacturing transformers exclusively has given Moloney experience and extensive data unequalled in the field. Moloney research and Moloney accumulated experience are your assurance of the newest in design, and lowest possible operating and maintenance costs.

MOLONEY ELECTRIC CO. • ST. LOUIS 20, MO.

POWER AND DISTRIBUTION TRANSFORMERS EXCLUSIVELY SINCE 1896

. . . OVER 50 YEARS OF LEADERSHIP IN DESIGN, RESEARCH, ENGINEERING

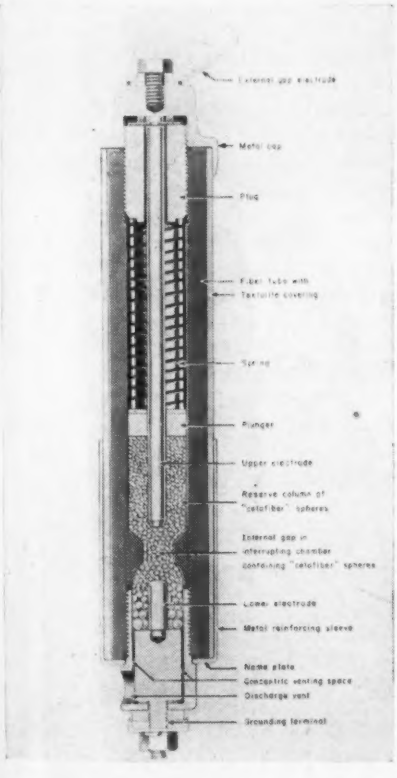
NEW EQUIPMENT

Arrester Internal Gap Contains Gas-Evolving Material

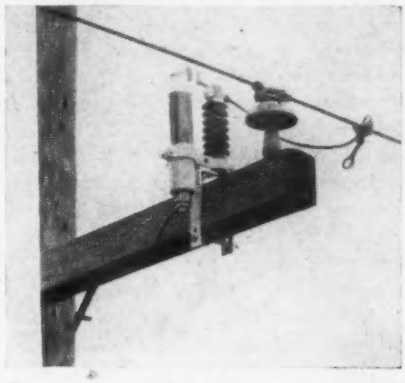
THE HI-STROKE rural arrester, a new heavy-duty expulsion-type arrester for lightning protection on rural lines, has been developed by the transformer division, General Electric Co., Schenectady 5, N. Y. The arrester is designed specifically for rural systems and is available in 6- and 9-kv. ratings.

One of the features of this arrester is the location of the internal gap in an interrupting chamber which contains gas-evolving material in the form of cellulose fiber spheres. A reserve column of spheres located above the interrupting chamber compensates for power-current erosion by replenishing the supply of spheres in the arc-interrupting chamber after each discharge of the chamber.

Leakage current through the arrester



is reported impossible as the line terminal and line side of the external series gap is supported by an insulator entirely separate from the arrester element. It can be provided with different mounting hangers to satisfy virtually all desired mountings of arresters, either



alone or for combination mounting with enclosed or open type fuse cutouts.

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Blades Electrically Heated On New Wire Stripper

A NEW "Hot Blade" wire stripper for continuous production stripping is announced by Ideal Industries, Inc., 1021 Park Ave., Sycamore, Ill.

Through use of two electrically heated stripping blades, the unit will strip cotton, silk, synthetic insulation or rubber covering from fine stranded or solid conductors. There is no possibility of cutting strands, nicking, scraping or injuring wire in any way, for the blunt blades cannot harm the finest wire, the company reports.

In operation, when a wire is inserted between the special heat resistant blades and foot pedal is depressed, two parallel grooves are burned through the insulation, down to the conductor. A slight twist completes the groove and a pull removes the insulation—leaving a clean edge. A built-in exhaust draws smoke and fumes of burning insulation away from blades. The strippings fall into a water drawer where any burning particles are extinguished.

Since different wire insulations strip differently, each blade has an individual heat control and transformer to permit raising or lowering the burning temperature as required for the particular insulation. A "Hi-Lo" switch, mounted between the blade controls, controls the adjustment of heat for heavy, average, and light insulation. The blades may be set at exact wire diameters, and an adjustable stop controls the length of stripping. This stripper is available for connection to a 115- or 230-volt, 50- or 60-cycle circuit, or a 115-volt, 25-cycle supply. The units have a demand of 200 volts.

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Iron Two-Screw Clamp Connector for ½-In. K.O.'s

NEW SERIES of connectors to provide a single type of fitting capable of terminating practically all kinds of cable or cord in a standard ½-in. K.O. has been designed by Gedney Electric Co., 1270 Sixth Ave., New York 20, N. Y. Two screw clamps are utilized to provide uniform pressure on the cable grip. This factor also makes it possible to use the connector on round or oval cord.

Fittings are recommended for use on rubber-jacketed cords, armored cable, non-metallic sheathed cable, and armored ground wire.

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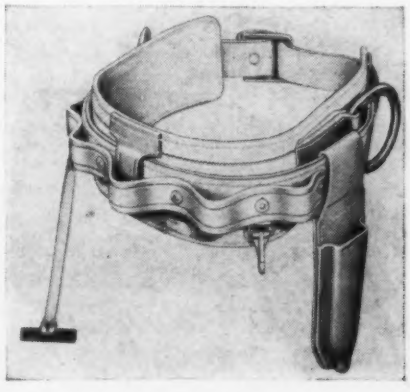
Lineman's Belt Incorporates Web, Leather in Construction

MANUFACTURE of a new type Strauss lineman's safety belt, incorporating qualities of both web and leather construction, has been reported by the safety division, Portable Products Corp., 395 Blvd. of the Allies, Pittsbrugh, Pa. The new belt is made of Diamond Stripe web strap 1¾ in. wide by 5/32 in. thick, with a tensile strength of 4,500 lb. Inside this srap is fitted a 4-in. wide web body pad which in turn



is lined with soft, pliable leather. Rivet burrs are positioned between the web and leather layers, to prevent contact with the wearer's body.

Tool loops are of oak tanned harness leather 1¼ in. wide, attached to belt by hand-set copper rivets. Attachments include snap, leather plier pocket and tape holder. All hardware including slip-proof buckle and Dee rings is constructed from special drop-forged steel. Weight of the new belt, designated as No. 625 PP, is 3 lb.

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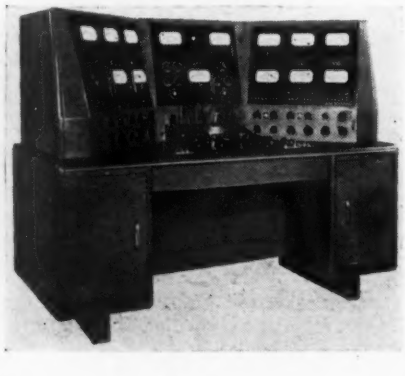
Vacuum Tube Bridge Characteristic Test Set

A VACUUM TUBE bridge characteristic test set, designed to reduce operator fatigue and eliminate personal errors frequently resulting from circuit arrangement, has been announced by Sylvania Electric Products Inc., Electronics Division, 500 Fifth Ave., New York 18, N. Y.

The console unit includes bridge and auxiliary switchgear mounted on the control shelf, electronically regulated power channels, bridge signal source, amplifier, meters, and other accessories. All meters except those for gas and heater cathode current are located on sloping panels. Voltmeters and respective current meters are mounted close together. All current meters have circuit jacks for external calibration.

Operating from a 1,500-watt, 220-volt, three-phase, 60-cycle source, the unit will provide 0-600-volt, 100-ma. supply for plate and screen grid; 0-300-volt, 100-ma. for auxiliary and heater cathode; 0-300-volt, 400-ma. for emission; and 0-100-volt, 2-ma. for bias. A reverse polarity switch is provided for heater supply which can also be used as a second auxiliary. Filament supplies include 0-128 volts a.c., 100 volt-amperes; 8 volts d.c., 5 amp.; 35 volts d.c., 2 amp.; and 128 volts d.c., 1 amp.

The console is approximately 55 in. high, 70 in. long, 34 in. deep and weighs approximately 1,500 lb.



Watthour Meter Testing Facilities Improved

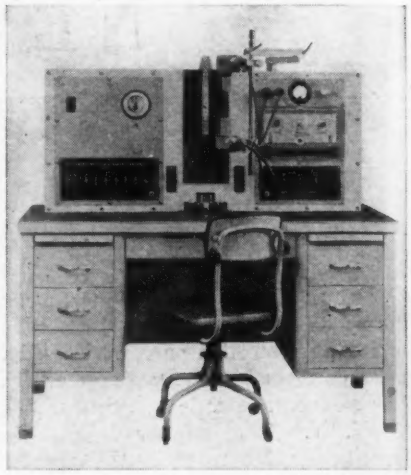
IMPROVED watthour meter testing facilities have been announced by Electrical Facilities Inc., 4224 Holden St., Oakland 8, Calif. The development is an outgrowth of previous models and includes several new features not included in these earlier designs.

The test equipment is housed in a steel cabinet across the top of a steel desk. This cabinet contains an eye-level rotating standard, and supports the meter hook and an adjustable swinging arm mounting for the timer photo tube and light source. Dead front switches to control operations are within tester's arm reach on the front of this cabinet.

Light load and full load currents may be applied to meters rated from 2.5 to 50 amp., 120 to 480 volts, by operating the proper selector switches. All single-phase and polyphase meters within these ranges may be calibrated with the test equipment.

One special feature of the test set reported is that the testing of three-wire, single-phase meters is done as if they were two-wire meters. By throwing a selector switch, both coils of such a meter are tested simultaneously and the need for opening the potential link is eliminated. In testing polyphase meters, either element may be tested separately, bucking, or in series.

Supplementing the meter hook and flexible test leads, a universal quick-connector adapter is provided to facilitate the testing of all single-phase, bottom-connected meters from the 1914



models to and including Type A meters. As these meters are slipped into place, all electrical connections are instantly and automatically made. Other adapters are available for mounting all socket-type meters.

This new equipment incorporates a panel mounted General Electric Photoelectric Timer. The company's uniload system applies 5 amp. and 120 volts to the rotating standard regardless of the voltage supplied to the meter under test. The company engineers report that for this reason the rotating standard and the multirange and instrument transformers need be calibrated at only one load point on one range and, furthermore, that they cannot be damaged by incorrect switch manipulation.

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1,000-Watt Audio-Amplifier Used as Vibration Tester

A 1,000-WATT audio-amplifier to be used as a vibration tester has been developed by the Thordarson electric manufacturing division, Maguire Industries, Inc., 936 North Michigan Ave., Chicago 11, Ill. The harmonic distortion and frequency deviation are reported held to a minimum of from 25 to 1,500 cycles per second, with an over-all gain of 96 decibels, at an input impedance of 100,000 ohms.

Hum level is held 48 db. below full output. Extended frequency ranges are available upon request and full output may be had from the external excitation of a small audio oscillator.

Overload and time-delay relays are provided for tube protection. Additional protection against overload is afforded by a specially designed power output limiting circuit which is effective on a wide range of output impedances. Pilot lights are provided to show operating conditions. Automatic cooling is provided by means of blowers located within the cabinet.

Tubes, connectors, etc., are accessible from the rear of the unit. The pre-

amplifier, power supply chassis and relay chassis are separately demountable. Each may be removed as a unit from the front of the cabinet for inspection during operation if necessary.

A fully designed final stage may be substituted for the 1,000-watt unit if power outputs up to 2,500 watts are desired.

Operator and controls are protected by the cabinet inclosure. A complete circuit interlocking door system is provided as a protection against energized parts.

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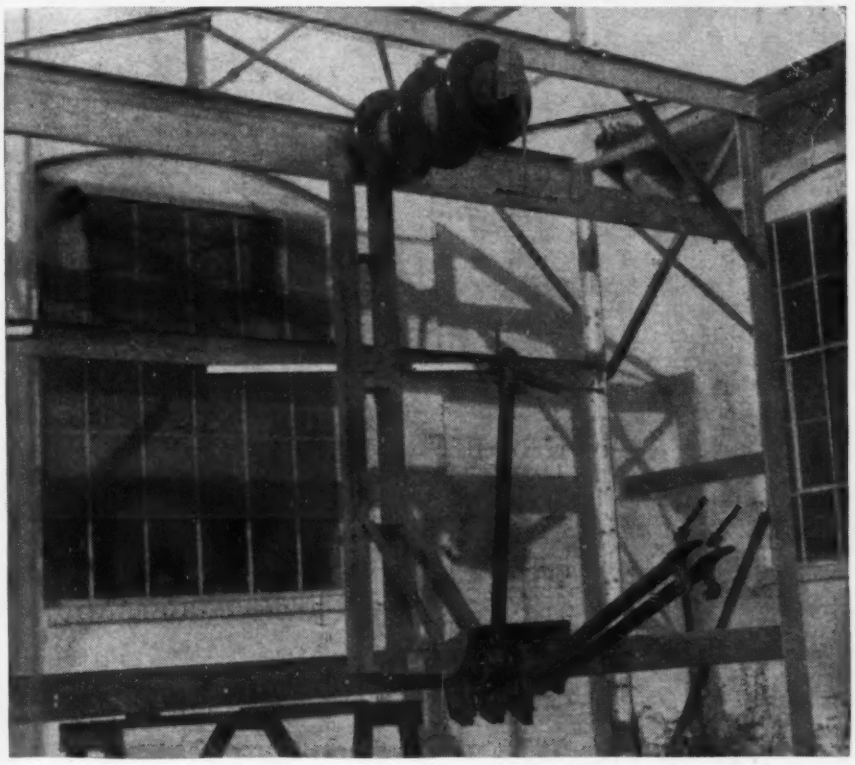
Fused Gap Provides Low Cost Lightning Protection



A REPEATING fused lightning arrester gap has been developed by the Southern States Equipment Corp., Hampton, Ga. The arrester was developed to provide a comparatively low priced protective device. It can be checked by visual inspection to assure protection is provided.

It is known as type "HRHA-1" repeating fused lightning arrester gap and is available in voltage ranges from 64 to 154 kv. A lighter duty model is available for lower voltage circuits.

The expulsion repeating gaps provide three tubes so that when one goes out the next automatically swings into position. Any tube which has blown will hang straight down, thereby signaling that a new fuse is needed, the manufacturer reports.

• • •

New Astronomic Dial on Time Switches

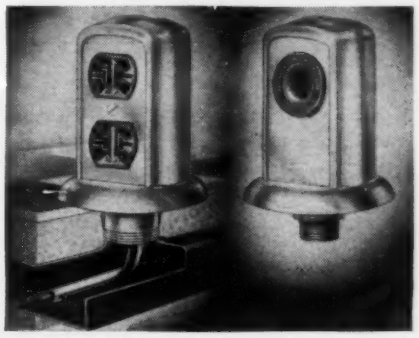
TIME-CONTROL CLOCKS with a new astronomic dial have been announced by the Tork Clock Co., Mt. Vernon, N. Y. They may be set to turn street lights or other electrical equipment on at exactly sunset or up to 40 minutes before or after. The same time latitude is provided for turning them off at sunrise.

Provision is also made for turning them off at a fixed time, if desired, anywhere between 11 p. m. and 1 a. m. The dial is equipped with a calendar wheel showing the month and the day as well as the time when the switch will operate. Models equipped with astronomic dials operate on standard time throughout the year and are set for the exact time correction (the variation from a standard time meridian) for the city or town where installed.

Clocks are self-starting, synchronous-motor driven with beryllium-copper blades and special silver-alloy contacts. They are housed in an indoor steel case with unbreakable window, or in an outdoor die-cast aluminum case with gasketed cover.

Two New Service Fittings For High, Low Potentials

TWO NEW service fittings for high and low potential wiring, designed expressly for use with the company's



underfloor wiring duct, have been announced by National Electric Products Corp., Chamber of Commerce Building, Pittsburgh 19, Pa. Service fitting No. 7903, with its standard duplex T-type receptacle, is to be used for high potential light and power wiring. Telephone, buzzer and inter-communication low potential wiring are serviced at the floor level by No. 7904. Of the same general appearance and construction, the service fittings are adapted to screw into standard outlets of the underfloor duct. Either model is wired and assembled with a single screw through the housing top. The one-piece housing double locks in the flange base, and is reported to eliminate the possibility of shearing off the conductors.

No. 7903 can be furnished with a 3-pole, twist-lock receptacle instead of the standard duplex, when specified. Telephone or signal wiring issues from No. 7904 through a rounded composition bushing.

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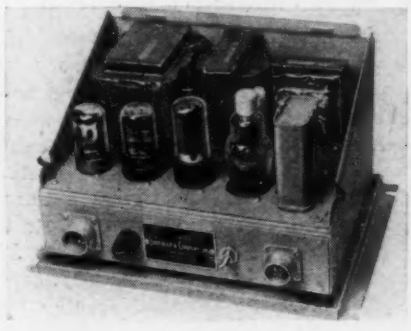
Voltage Regulator Usable In Fluctuating Temperatures

A RECENT ADDITION to the Sorensen & Co., Inc., Stamford, Conn., line of a.c. voltage regulators is the model D-500, designed specifically for general industrial application and aircraft us-



age. The regulator employs "Fosterited" transformers and is hermetically sealed to withstand climatic conditions.

It has a frequency range of 360-500 cycles, input voltage range 95-125, and output voltage range of 110-120, a load range of 50-500 va., a regulation accuracy of 0.5 percent, a harmonic distortion of less than 5 percent and a transient recovery time of approximately 4 cycles.

The D-500 was designed to withstand ambient temperature range of minus 55 deg. C. to plus 70 deg. C. The unit weighs 12½ lb. Additional models with greater power atings can also be provided.

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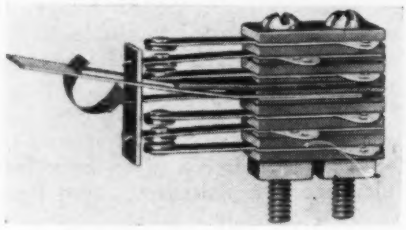
Snap-Action Open Blade Unit For 2-Pole Application

A NEW, compact, snap-action, open blade switch for two-pole applications has been designed by Acro Electric Co., 1340 Superior Ave., Cleveland 14, Ohio. It is constructed with a patented beryllium rolling spring and is made with both single- and double-throw contacts. Standard operating pressures are from 3 to 5 oz. It is furnished with terminals as illustrated, or at the rear. It is 2⅛ x $\frac{35}{32}$ x ⅜ in. in size, is rated at 15 amp., 125 volts, a.c., and has a movement differential of approximately $\frac{1}{16}$ in.



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Welder Equipped with Arc Booster and Current Control

A NEW "Fleet-Arc" a. c. welder equipped with an arc booster which is said to augment the current the instant the arc is struck has been announced by the Lincoln Electric Co., Cleveland 1, Ohio. The arc is struck automatically the instant the electrode touches the work. This feature of the new welder, the company reports, has been accomplished without the use of high-frequency devices or higher voltages.

A selector switch on the front of the welder governs the amount of booster current to be used in striking the arc. This provides a complete range of striking intensity to suit requirements in the welding of thin sheets or heavy plates. Current control, continuous

and self-adjusting, is provided by a rotating reacting control, which affords fast setting throughout the range of the welder. Operation of the current control is fast, the company reports, and involves the turning of a hand wheel which requires a minimum number of turns to cover the range. The amperage is indicated on a calibrated dial on the face of the welder. Protection from overheating is provided by thermostatic control. Low open-circuit voltage is reported to provide a higher power factor and a reduction of condenser requirements. The welder is manufactured in 200, 300 and 500-amp. ratings.

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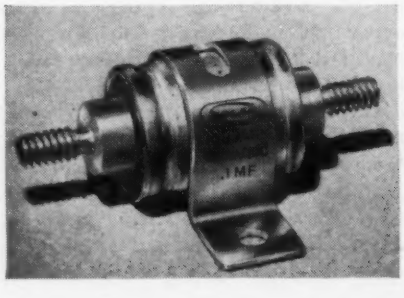
High Current Feed-Thru Filter Capacitors

SMALL, lightweight, three-terminal, network filter capacitors, capable of continuous use at currents up to 100 amp. with line voltages up to 250 volts a.c., have been released for general use by Solar Manufacturing Corp., 285 Madison Ave., New York 17, N. Y. These capacitors, originally developed for war-time applications in attenuating radio interference from motors, generators and other electric equipment used by the air forces, are available in values up to 0.75 mf. They are hermetically sealed and furnished in corrosion-resistant metal housings.



Midget Ultraviolet Lamp Developed for Refrigerators

A MIDGET ultraviolet Sterilamp drawing 3½ watts and designed for application in home refrigerators has been announced by Westinghouse Electric Corp., Bloomfield, N. J. The new lamp simultaneously emits bacteria-killing rays and produces ozone in the air. It is reported to retard spoilage and mold growth in high-humidity cabinets and to cut down food odors in the lower-humidity cabinet.

The lamp operates only when the refrigerator compressor runs and on this basis is reported to have a life of one year or greater. The transformer required also consumes about 3½ watts.

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Lucite Street Light Globes Prevent Vandalism

STREET LIGHT GLOBES made of Lucite acrylic resin, a transparent plastic, have been developed for use in city parks, alleys and secluded areas where vandalism occurs, reports the E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del. An order for the plastic globe sections is being filled by the Steiner Mfg. Co., New York City, for the Welsbach Street Lighting Co., Philadelphia.

The plastic is reported to have excellent light diffusion properties and to combine the advantages of glass for that purpose with the additional quality of impact resistance. The globes are made of four sheet sections of patterned du Pont Lucite which are slipped into slots of a metal holder to form the familiar vase-shaped street light enclosure.

The sections as turned out by the Steiner Co. are sawed to size and shaped on a forming jig. Edges are trimmed by bandsaw. The sections are turned over to the Welsback Co. for insertion into the metal forms. The sections can be used in the same metal holders now used for glass globes. The plastic and glass are interchangeable.